OCTOBER 1998
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internet magazine

We find the ISPs you can trust

THE HOMEPAGE IS WHERE THE HEART IS ISSUE

1 Homepage experts reveal their secrets

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2 Traffic and how to get it

Five surefire ways to make your site great

3 HTML editors we choose the best

5 How to give your site worldwide appeal

4 Tips from the professionals in our Web Site Challenge

Pornography

How dirty money drives the Net

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Pipex Dial	✔	x	x	£151.75	£151.75	£151.75
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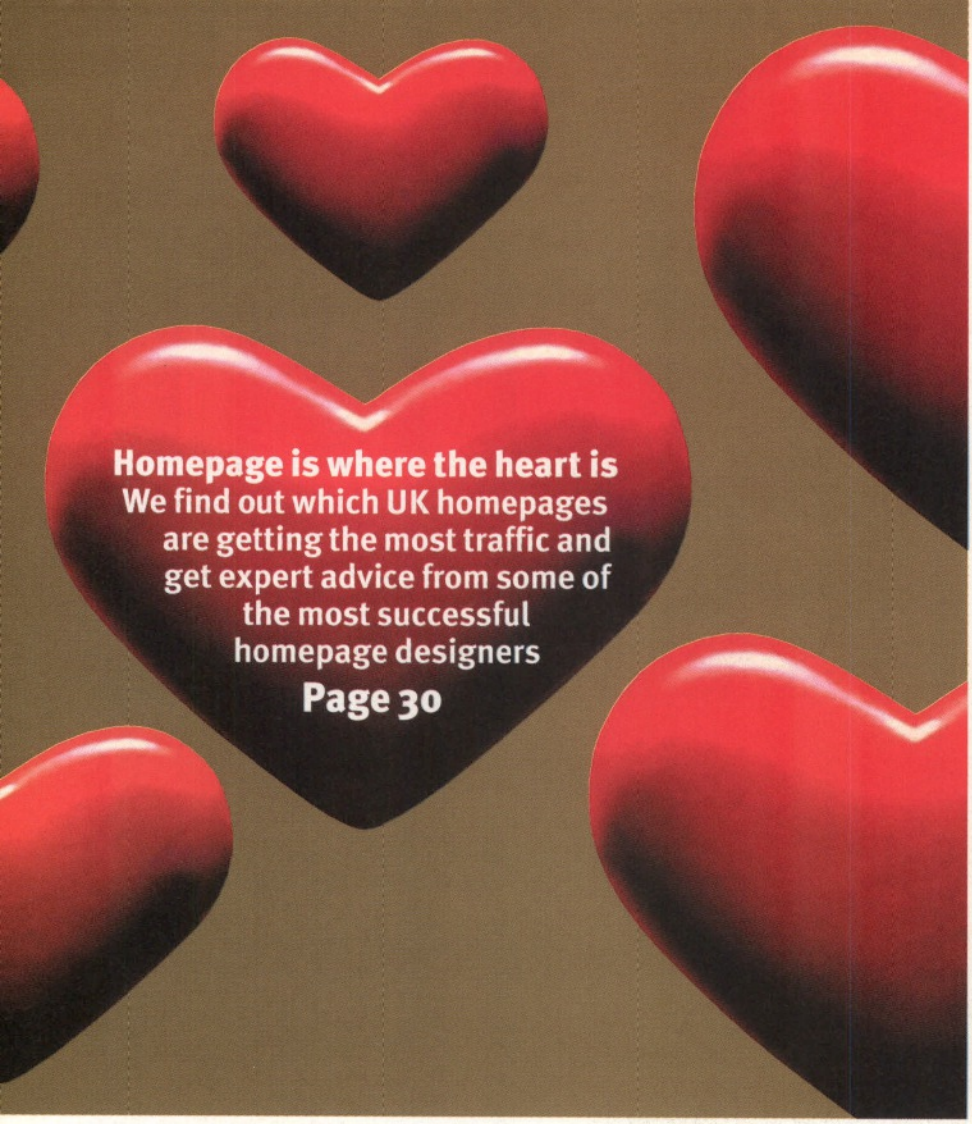

Homepage is where the heart is
We find out which UK homepages are getting the most traffic and get expert advice from some of the most successful homepage designers
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Win a great PC!

Fancy a Dell XPX R350 PC, with a built-in 56K modem, Iomega Zip drive and 17-inch monitor? Find out how to win this great prize on Page 83

Subscribe and get a free CD holder

Subscribe now and not only do you get 12 issues of Internet Magazine for a mere £19.95 but you also get a rather spiffing CD holder thrown into the deal
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internet magazine
October 1998, Issue 47

TFI Friday is part of Ginger New Media's launch programme, and gets our Site of the Month treatment, Cyberstudio gets a best buy award from the Labs team, Image Ready and Office Connect get themselves reviewed, Anthronauts are looking Flashy in spotlight, and race yourself silly with HP's new site

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A modem come answerphone come fax

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The most comprehensive listing of the UK's Internet Service Providers

ISDN access still overpriced

So BT has finally launched its Home Highway service (**www.highway.bt.com**). This magic box combines ISDN with a normal phone connection. The system sounds promising, but there's one big let down – price.

It's all based around a box, which BT installs when you subscribe. You get one normal phone connection and two ISDN connections plus three phone numbers. One of these numbers can be the same as your old phone number. You can use normal phones and faxes on the line, but you'll need an ISDN Terminal Adapter (the ISDN equivalent of a modem) to use the data features.

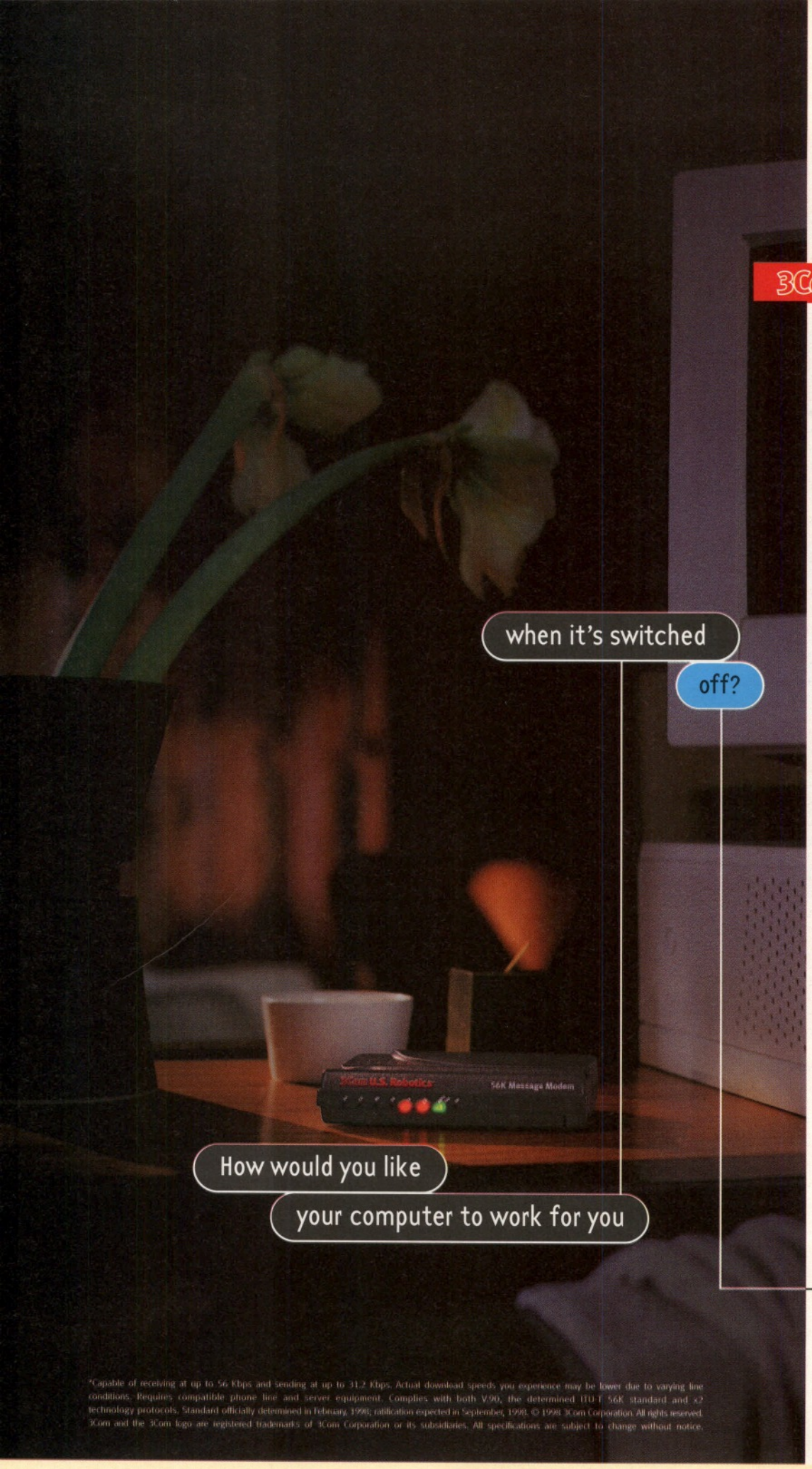
But here's the rub, BT is charging £175.09 to convert to Home Highway plus a not inconsiderable monthly rental fee of £27. You can get the installation price down to a slightly more reasonable £116.33 but that's only if you're prepared to pay a £40 a month rental charge (which includes £15-worth of calls). This pricing isn't going to encourage people to move to ISDN. There are big advantages to switching to ISDN, but are they worth over £200?

The MD of BT's business division, Afshin Mohebbi is bullish about the product though. He reckons he'll have a BT Highway product in "every UK household within the next five years". Now if Home Highway was an aggressively priced ISDN service he could have a big seller on his hands but at the moment it's just too uncompetitive.

While we're on the subject of getting extra lines installed, we've also had a clutch of letters from readers (see page 24) complaining about how the installation of a second BT phone line has slowed down their Net access. This is thanks to BT using a bizarre device called a DAX – a box which effectively splits a single line into two lines. This can affect the quality of the line. For voice calls you won't notice, but modems do. BT has acknowledged there's a problem, but hasn't said what it's going to do about it.

The moral of this story? Specify No DAX if you're planning to get a second BT line installed.

Richard Baguley
Technical Editor



The 3Com U.S. Robotics 56K Message Modem never sleeps, never rests. Use this modem for worldwide Internet access at up to56Kbps*, e-mail, fax, personal voice messaging service and as a hands-free speakerphone.**

3Com U.S. Robotics

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*Due to varying line conditions, the download speed you experience may vary.
**To utilise all voice features, a handset, powered speaker or sound card is required.

The 3Com U.S. Robotics 56K Message Modem

*Capable of receiving at up to 56 Kbps and sending at up to 31.2 Kbps. Actual download speeds you experience may be lower due to varying line conditions. Requires compatible phone line and server equipment. Complies with both V.90, the determined ITU-T 56K standard and x2 technology protocols. Standard officially determined in February, 1998; ratification expected in September, 1998. © 1998 3Com Corporation. All rights reserved. 3Com and the 3Com logo are registered trademarks of 3Com Corporation or its subsidiaries. All specifications are subject to change without notice.

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Angel House
338-346 Goswell Road
London EC1V 7QP
Fax: (0171) 880 7441
Web site: www.internet-magazine.com
For general subscriptions queries, please phone (01858) 435 338 or fax (01858) 435 958

Editorial

Editor **Gail Robinson** (0171) 880 7428
gailr@internet.emap.com

Online Editor **Mike Hales** (0171) 880 7423
mikeh@internet.emap.com

Production Editor **Tanya Kreisky** (0171) 880 7430
tanyak@internet.emap.com

Art Editor **Craig Lancaster** (0171) 880 7429
craigl@internet.emap.com

Technical Editor **Richard Baguley** (0171) 880 7425
richardb@internet.emap.com

Reporter **Paul Bennett** (0171) 880 7426
paulb@internet.emap.com

Contributing Editor **Mike Bracken**
mikebr@internet.emap.com

Cover CD Editor **David Parry**
davidp@internet.emap.com

Freelance Designer **Russell Moorcroft**
Freelance Sub-Editors **Adrienne Grubb, Giles Anderson**

Advertising

Advertising Director **Andrew Archer** (0171) 880 7406
andrewa@internet.emap.com

Sales Manager **Nigel Ashton** (0171) 880 7407
nigela@internet.emap.com

Account Manager **Shirlene Chandrapal** (0171) 880 7409
shirlenec@internet.emap.com

Account Manager **Penny Dakin** (0171) 880 7408
pennyd@internet.emap.com

Production Manager **Ann-Marie Allen** (0171) 880 7411
annmariea@internet.emap.com

US Advertisement Sales **Clive Bullard/Peter Roper** +1 (212) 924 0835
cliveemap@aol.com/peteremap@aol.com

Publishing

Associate Publisher **Sonja Woolley** (0171) 880 7421
sonja.woolley@ecm.emap.com

Publishing Assistant **Claudine Platt** (0171) 880 7410
claudinep@internet.emap.com

Subscriptions and back issues

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ABC **Audited average monthly circulation: 53,221 (JAN–JUNE 1997)**

Looking for the UK's Best Value provider? Why go any further?

(Page 3 has everything you need)

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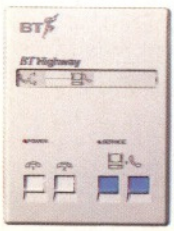

Tired of hold ups? Then get on the BT Highway. Because this simple box converts your existing phone line into two high speed digital lines. You can use your phone and run your PC at 64Kb per second. Or you can use both lines together and get 128Kb per second. Don't wait any longer.

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BT HIGHWAY IS AVAILABLE ON MOST BT EXCHANGES AND IS SUBJECT TO SURVEY

news

BT beaten to pay-as-you-go Internet service

Cable & Wireless adds to BT's woes

It's not been the best of months for BT. First, its BT Internet service goes belly up for half a day, then arch-rival Cable & Wireless trumps its much heralded pay-as-you-go BT Click service with its own variant, Internet Light.

BT Click, you'll no doubt remember, is BT's pay-as-you-use Net service which will incur no monthly fee – 1p per minute will be added to your existing home bills. The service had been heralded as an ISP-killer by many people who should know better, both inside and outside BT.

Cable & Wireless is, rightly, crowing that its service will be up and running a month before BT Click. Yet the cost of the service is not directly comparable to BT's. For a start, there's a £10 sign-up fee, which gets you an email address and access to 24-hour support. Then there are different billing rates. C&W claims its weekend national rate is 45p per hour until the end of November, and £1 per hour after that. BT's, it points out, is higher, at £1.17 per hour.

As C&W points out, the service is for Net newbies who don't plan to use the Internet regularly, but given that the price options are clearly designed to make people switch their phone service from BT to C&W, the marketing is a bit disingenuous. Given that C&W is also flaunting its award from the Plain English Campaign, we think the following sales speak is a bit confusing:

'A one-off registration fee of £10 entitles the user to lifetime free Internet access with no monthly subscription fee.' We'll forget the use of the phrases 'free' and '£10' in that sentence, but surely C&W wouldn't be confusing its phone users with the lure of 'free' Net access only for them to find out that calls are charged at a higher rate than they would be if you were dialing into a local POP using a conventional ISP account?

www.cwcom.co.uk Internet Light. Not as much fun, but better for you

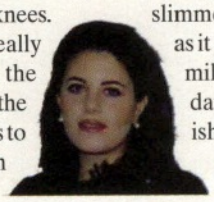
www.bt.com BT Click. Now how many focus groups did it take to come up with that one?

ACCESS

Monica slows Net access to a crawl

Clinton/Lewinsky sex scandal coverage brings Net performance issues to a head

She's a talented woman, that Monica Lewinsky. The intern has single handedly brought leading Web news sites to their knees.



In truth it's not really Monica herself, but the unparallelled interest in the case that drove Net users to swamp the news sites. In late August when President Clinton testified about the Lewinsky relationship, the Net experienced one of those usage surges that happen occasionally, the last time being during the Louise Woodward trial.

In the good ole' US of A, CNN slimmed down its homepage as it geared itself up for 15.5 million site views in one day. Yet, as the day finished with President Clinton launching air strikes against Sudan and Afghanistan, CNN reported a record-breaking 20 million page views. The site was getting a quarter of a million hits per minute, so it comes as no surprise that it slowed to a crawl. Similarly, MSNBC and ABC reported sluggish service.

In the UK, where the news broke in the middle of the night, it was Clinton's bombing raids on Sudan and Afghanistan that upped the usage charts. Bob Eggington, project director at BBC News Online, claimed that usage doubled from 430,000 to 869,000 on the day of the bombings. Eggington believes big stories like these are good news for the BBC News operation, as they seem to hang on to the extra visitors once the initial news story has died down. "Any big story results in a big step up. We're growing steadily at between 5 and 10 per cent. The Embassy bombs and the Omagh tragedy gave us big increases. We think we might exceed 20 million page views for August."

http://news.bbc.co.uk

More traffic than ever before

OVERHEARD THIS MONTH IN HACKER LAND

"Vendors of a digital sieve... Microsoft's Swiss cheese approach to security... they don't care. Security is way down on their list of priorities". **The Hacker group, Cult of the Dead Cow, doesn't think much of the security features built into Windows...**

Planet Online sold to Energis

Energis buys Planet in a bid to boost its Net offerings

Paul Sykes, fervent anti-European activist and erstwhile scrap metal dealer, has sold his Leeds-based ISP, Planet Online, to Energis.

Started in July 95 from his native Yorkshire, Sykes' Planet quickly saw the opportunity of selling Net access and services to the business market when most access companies were still focusing on the consumer dial-up sector. With key markets in sport and finance, Planet became one of the UK's largest ISPs, but it seems the lure of a straight cash bid by Energis was too great to turn down. "We did have other approaches, but this one was the best fit for the company and shareholders," says operations director Philip Taysom.

Although Planet showed a profit of only £530,000 after tax last year, it seems Energis needed Planet badly – to the tune of £75 million, with more to come if Planet hits its projected targets. Energis is in direct competition with BT and WorldCom, among others, and claims to carry up to 40 per cent of the UK's Internet traffic.

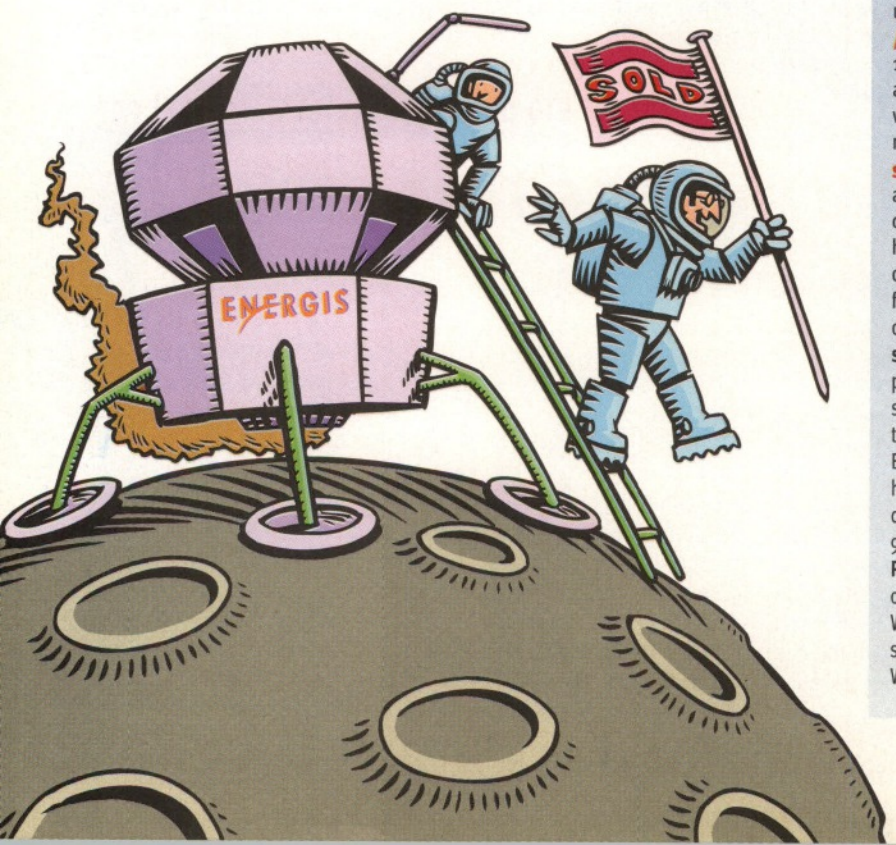
With a 5,000km fibre network along the lines of the old National Grid pylon infrastructure, Energis seems to be in good shape as businesses ramp up their Net requirements. Yet, as we reported last month, BT has dramatically cut the costs of its leased line and business Net services, and the acquisition of Planet is seen by many as a strategic buy to consolidate Energis's Net portfolio.

For Planet, that's a great strategy "This is a marriage which will continue the sucess of both companies" Says Taysom. "We will continue to operate as an autonomous business unit, but we are already offering combined products.". The directors of Planet will remain only as part of a Northern advisory board.

It seems clear that for Sykes, at least some of the money is already earmarked for his political ventures. Sykes, is a friend of Cecil Parkinson and has funded politicians who stand against further European integration. How that squares with running a Net company, which encourages the bypassing of national barriers, we're not sure.

www.theplanet.net Sophisticated? We've been to Leeds

www.energis.net A different type of phone company! Quite



News just in...

Netscape redesigns its portal to provide personalised content at **my.netscape.com**... **Microsoft** buys 7.5 per cent of French electronics manufacturer Thompson electronics...The **BBC** claims its sites are still the most popular in the UK, with over 35 million impressions a month, although it later emerged that two thirds of these were from Web scanning robots and not real people. Nevertheless, the **BBC** managed to get more hits on its sites than News International – 13.5 million a month, compared with News International's mere 10.5 million... **Sun** and **IBM** launch their joint Java operating system for business initiative with the aim of 'driving toward a standard operating system for thin-client computing'. Join the excitement at **www.sun.com/javaos /business/**... **BT Internet** claims it now has 150,000 subscribers...Web portal, **Excite**, launches Net telephony service, Net2Phone, through its site at **www.excite.co.uk**... Hacking group **Cult of the Dead Cow** create a new hacking tool (the bizarrely titled Back Orifice, available at **www.cultdeadcow.com**) that can remotely control a user's computer. A number of companies launch free programs to detect and remove the bug, including ISS at **www.iss.net/ xforce /alerts/advise5.html**...

Usenet news search engine Dejanews revamps its site, and includes a personalised service that will monitor newsgroups of interest and let you know when new messages appear... **Barweb** (**www.barweb.net**) launches a new system that translates barcodes from products into URLs. The company is trying to get the system built into remote controls for set-top boxes. You could go to the Coke site by simply scanning the barcode from a can... Giant German publishing company **Bertelsmann** is planning to launch an online bookstore...**IBM** unveils a new encryption system (called the Cramer-Shoup system) that it claims will be unbreakable. Try cracking it at **www.zurich.ibm.com /Technology/Security/publications/1998/CS.pdf**... One in 10 people is expected to use an **online bank** by 2003, according to Fletcher research, but many may be banking with banks from outside the UK... **AOL** claims to have 13 million subscribers worldwide. And you wondered why **smith@aol.com** had already been taken...**Allaire** announces the launch of version 4 of its Cold Fusion database interface program, which contains plenty of new high-end features like automatic creation and administration of clusters of servers... **Quark** makes a $1.89 billion offer for **Adobe**, but withdraws it when Adobe says no... An 18 year old Californian programmer is facing a **possible prison sentence** after the Government decided to prosecute him for putting software that uses strong encryption on his Web site... A new bug was found in **Microsoft's Access** database that could lead to data being deleted or scrambled – blame Bill next time you get a huge phone bill... A **Texas millionaire** has apparently paid a genetics lab $5 million to clone his dog... A version of the **Opera browser** (reviewed in the August 98 issue) is being written for the Be operating system... **PanAmSat's** latest satellite is destroyed 72 seconds after take off because of a fault. PanAmSat's Web site (**www.panamsat.com**) strangely fails to carry the promised Webcast of the launch...

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OVERHEARD THIS MONTH IN CAPE CANAVERAL...
"It's like being punched in the belly," says the US Air Force Brigadier who pressed the button to destroy a $255 million PanAmSat satellite just 72 seconds after launch. PanAmSat deny that they were the ones who held him down...

DOMAIN NAMES

Domain decision

The endless debate on how to run the Internet domain name system could be drawing to a close

Quiz time: Who said this? "We hope and believe that this...will be endorsed and supported by nearly all of those stakeholders that are participating in this process, and will protect the legitimate interests of the millions of individuals and groups that have an interest in the outcome of this process but have not been able to directly participate in it." No, not Tony Blair, it's John Postel, power broker in the war to run the domain name system, and he's talking about a new super-organisation to run the naming world.

Confused? You should be. For over two years, domain registrars and registries, governments and Net-heads have been at war over the domain name issue. Postel and his organisation the IANA, Internet Assigned Numbers Authority, have tried to please everyone, but since the US Government ruled that a new body should run the system but refused to do anything about it, confusion has reigned.

With the end of September deadline looming, when the new body has to come into force, Postel has put forward a third and hopefully final proposal. With more than 65 technical and non-governmental bodies lobbying hard at this summer's Internet Society shindig in Geneva, it was perhaps no surprise that the last proposal sees the new IANA as an administrative body, not a governmental body. It will be based in California, and be registered as a non-profit outfit. Also, after years of running IANA with no motive other than goodwill, Postel has announced he has no plans to be the new IANA's head honcho.

With many lobby groups pressurising the new body for action, Postel has also cleverly avoided trying to create a body with worldwide membership. Instead, the new IANA will function above numerous supporting organisations – technical, national and governmental – all of which will have membership rights in the new outfit. Whether this will solve the many commercial and legal pressures surrounding domain names isn't clear, but it seems Postel and the IANA have stopped trying to become the panacea for all the Net name ills and are concentrating on historical strengths.

Postel indeed, clearly states that the new IANA aims to "ensure that the Internet functions efficiently from a technical perspective." Which brings us back to where we were two years ago... **www.iana.org/bylaws3.html And what happens now? Who knows!**

NET ACCESS

UUNet says it's not selling Dial

UUNet assures *Internet Magazine* that its dial-up service, Pipex Dial, is definitely not for sale

Following on from last month's news story, which suggested UUNet was looking to sell its Pipex Dial service, the company has told *Internet Magazine* it's not disposing of the business. Richard Woods, UUNet's corporate communications manager told us "the headline [What future Dial?] suggests some doubt about the future of Dial – but there's no doubt. It's a well-respected service which forms a key part of our offering to professional and business users."

Woods was also at pains to play down the impact of BT's new Click service on UUNet's dial-up business. "While Click may appeal to home users who don't expect to use the Net much, we don't expect it to impact on our Dial business. Professional users need the support and flat rate charging that we offer."

www.uk.uu.net

● We'd also like to point out that UUNet has over 70,000 users, not 50,000 as stated in our news story.

Research Focus
Online banking in the UK

If the Internet is the future of electronic commerce, why are so few UK banks offering Internet banking to their customers?

Banks need to act fast to grab the business of Internet users. However, evidence suggests that while the financial services industry in general has reacted quickly to the challenges of the Net, UK banks have been dragging their heels.

A recent survey from Fletcher Research found that UK banks have been slow to respond to the potential of the Internet to develop a loyal customer base. As a result, UK banks are lagging behind their European counterparts. The UK has only four banks which provide online banking facilities, compared to Germany's 17. The study also found that the percentage of Britons banking online is less than in other developed countries. While it's evident from studies of the market that the average UK Internet user is sophisticated enough to engage in interactive financial services, it seems banks are just not responding fast enough.

"UK Internet users are sophisticated enough to engage in interactive financial services but the banks are not responding fast enough"

Meanwhile, Web sites which need to attract a lot of traffic are recognising the potential of providing sophisticated and free investor information for their visitors. Much of the most sophisticated financial information online is being published by non-financial firms. Moreover, the kind of services currently being offered by non-financial sites, online brokerages and financial services sites is far superior to the services offered by online banks.

If banks are to maintain customer loyalty, they must become more aware of what information smaller financial institutions and their US counterparts are providing online. The report from Fletcher Research predicted that, by 2003, seven million people will be banking online in the UK. The report also noted that while there would be a surge of interest in online banking, the emergence of competitors from the US and Europe is likely to attract the existing customers of bricks and mortar banks with no online presence.

Banks have the potential to become hubs of online commerce. They need to provide ancillary services such as access to information on stocks, real estate reports, online travel information, shopping malls and the latest financial news if they are to make the most of their existing customer base.

Research focus is produced by NUA, a Dublin-based Internet and Web consultancy. www.nua.ie

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Virgin	✓	✗	✗	£122.45	£10.20
Pipex Dial	✗	✗	✗	£151.75	£12.75
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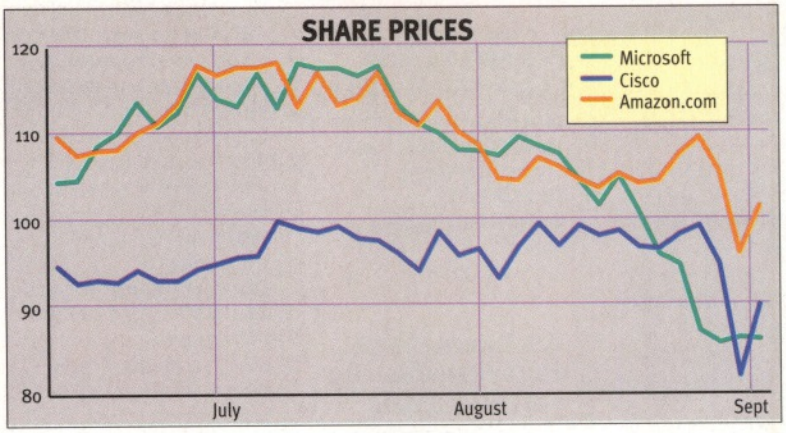
OVERHEARD THIS MONTH IN A US COURT
"He was evasive and non-responsive" said a source on Bill Gate's testimony in the ongoing DoJ court case. But that's just so uncharacteristic of our Bill...

Net stocks plunge

Has the bubble finally burst for Internet stocks?

Internet stocks experienced some of the worst falls in the recent rollercoaster ride on the world's major stockmarkets, but many have already bounced back. In the high-tech sector, however, Asia and the Far East may not be entirely to blame.

As *Internet Magazine* went to press at the beginning of September, stockmarkets around the globe were reeling from massive falls, the likes of which we'd not seen since the crash of October 1987. On 31 August, the NASDAQ index fell further than at any time in its history, sloughing off 8.57 per cent, while the Dow's 513 point drop was its second biggest fall ever, beaten only by Black Wednesday.



Many of the worst affected were high-tech and Internet stocks, such as Microsoft, Cisco, Dell, Excite and Amazon.com. Markets rallied on 1 and 2 September, led in part by rallying computer stocks. But some – notably Amazon.com and RealNetworks – failed to recover any of their earlier losses, sliding even further.

According to analysts, the reason for the tech stocks' hammering was not the problems in Japan and Russia, but instead that valuations in the Internet sector are often wildly inaccurate. Investors have also taken the opportunity to do some profit-taking. Douglas Smith, European technology analyst at Salomon Smith Barney, believes "it's clear that people are taking a lot of profit on stocks that have gone up much faster than the market as a whole", adding that there are concerns about valuations. "Internet stocks have a lot less to fall back on in terms of traditional indicators. And none of them will be paying a dividend." Internet stocks rise faster and fall faster than the market as a whole. "We're clearly in for a period of high volatility," Smith added.

STANDARDS WATCH

The next step for Web design

Just because something is made a standard, it doesn't mean people will use it, especially if they think they can make more money selling their own technology. So it won't come as much of a surprise to hear that Microsoft has said it won't support SMIL, the Synchronised Multimedia Integration Language, which the Web Consortium endorsed this Spring. Microsoft wants to do things its own way, in the hope that if IE doesn't support SMIL then nobody else will use it – and they may be right.

The latest draft recommendation from the W3C is unlikely to suffer the same fate, if only because it's far more important. The extensible style language (XSL) takes the idea of style sheets beyond what's possible using Cascading Style Sheets (CSS) by using the power of the extensible markup language (XML).

Underneath all of these abbreviations, there's something significant going on. At the moment, if you want to separate the way a document is displayed from its content, you use style sheets. XSL does the same for XML documents. It gives developers more precise control over the layout of a document and includes commands to control formatting for printed documents, solving a big issue for many Web page designers. Finally, it lets developers specify so-called 'transformations' – how to display a document written to one XML specification under an alternative one. This will let sites display content in different formats without having to keep separate copies.

W3C WORLD WIDE WEB consortium

XSL is not a replacement for cascading style sheets, it's far more complicated. The W3C will carry on working on both standards, but as XML conformant browsers emerge over the next year, it's likely to be the long-term solution to the problem of keeping content and layout separate. Not even Microsoft can ignore that.

www.w3.org/TR/WD-xsl

One internet connection for an entire network!

WinGate 2.0 is a powerful Proxy/Firewall server, which can allow your entire network to share a single Internet connection (Modem, ISDN, leased line, etc.) with nearly any type of client running TCP/IP.

WinGate Pro also includes the ability to limit the access the users have to the Internet, Logging and Auditing, SOCKS5 and HTTP caching.

WinGate 2.0 runs as a service under both Windows NT and Windows 95. This means that WinGate starts when Windows is run... no user needs to be logged in.

WinGate 2.0
Licenses are issued in Lite or Pro versions, for 2, 5, 10 or Unlimited users.

Also available

MDaemon is an inexpensive but powerful mail system that will allow users on a LAN to email one another and users on the Internet.

MDaemon licenses are issued for 5, 25, 50 and 5000 mailboxes.

For further information on WinGate 2.0, MDaemon, Free Downloads, Trial Keys and UK availability, call

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OVERHEARD THIS MONTH IN PORNO LAND

"The site was created to bring together the two most sought-after commodities on the Web—stock quotes and adult entertainment" the creator of a new site combining US stock prices with naughty pictures of scantily-clad people explains his interesting marketing approach.

Time Line

WIN

Admit it: you always wanted to be a high finance wheeler-dealer. Now the Net can make your dreams come true. From the end of September, the US Government will let you buy Treasury Bonds on the Web at **www.publicdebt.treas.gov**
Whatever next? Gordon Brown selling Premium Bonds online?

THIN

Early October sees the launch of Cybercash's 'thin' wallets (**www.cybercash.com**). That's thin as in thin client, rather than empty. The wallets give you one-click shopping on e-commerce sites.

BEANS

NetObjects launches its rather cool JavaBean tool in mid October– although you may not want to admit that you use 'BeanBuilder' to your friends (well not in the middle of a dinner party).
www.netobjects.com

SPIN

Set aside 7-9 October. A meeting of senior Government ministers from the Organisation for Economic Co-operation and Development (OECD) could well prove a decisive moment in the development of the wired world. Digital signatures, encryption and e-commerce are all on the agenda. Honestly, it could be really important!
www.ottowaoecd conference.org

PROTECT

24 October – The new Data Protection Act comes into force today. You can now see information held about you on paper as well as on computers.
www.parliament.uk

All expenses paid

This month's Net conferences, courses and seminars...

Live 98

This home electronics and entertainment show is the biggest UK Expo of consumer technology. Adults get in for £9 and children for £6.
24-27 September
Earls Court, London
(0181) 742 2828
www.live98.com

Web design and development conference

Big US conference for Web professionals. A VIP pass to the whole shebang will cost you $1,795 (£1,075).
22-26 September
Hynes Convention Center, Boston, USA
+00 781 821 6723
www.mfweb.com/

Introduction to client/server and Internet computing

If this is your bag and you're free at the beginning of October, it'll set you back £934.13.
5-6 October
London
(0181) 785 9988
www.ttiuk.co.uk

Electronic Commerce 98

This three-day exhibition and conference attempts to make the E-word understandable to the non-technical. The BT awards for innovation in e-business will be announced on the opening day.
13-15 October
London Olympia
(0181) 332 0044
www.e-commerceshow.com

Software Development 98

Speed up the M40 and you'll catch this Miller Freeman show which includes seminars on getting to grips with Java.
13-15 October
NEC Birmingham
(01203) 426 508
www.softdev-expo.com

Building and managing a successful Web site

This three-dayer promises to lead you through the big issues in Web site development. Java, ActiveX and CGI are all covered. More importantly, you'll learn how to bring a Web site online on time and within budget. Sign a cheque for £1,286.83.
13-16 October
enquiries@iirtechnology.co.uk
(0171) 344 3900

European Cable Communications 98

200 companies will be wooing you with promises of super-fast Net access.
20-22 October
National Hall Olympia
London
(0171) 460 4220
www.eurocab.com

The Internet and your business – an essential guide

TECH Connect has laid on a series of courses on how to get your business online. Topics covered include how to find the right ISP, security issues and e-commerce.
22 October
Kingston-upon-Thames
27 October
Manchester Crown Plaza Hotel
28 October
Birmingham Copthorne Hotel
4 November
London Kensington Park Thistle Hotel
5 November
London Bonnington Hotel, Bloomsbury, London
(0161) 928 8989
www.tech-connect.com

InsuranceNet 98

This one-day conference and exhibition focuses on the key developments on the Internet within the insurance industry. It's organised by *Insurance Age* magazine and sponsored by Royal and Sun Alliance. Extranets, security, the EU directives, e-commerce and new media will all be given an airing. The delegate fee for this day out is £287.88.
9 November
Olympia Conference Centre
sarahp@finance.emap.co.uk
(0171) 505 8185
http://insurancenet98.insuranceage.com

Apple Expo '98

Apple Expo is the UK's only Mac-specific event offering the complete spectrum of Mac-related hardware and software for the consumer and education markets. If you're a Mac user – be it in education, at work or for leisure – this is the show for you. The sexy new iMac will also be on show for the first time in the UK at the exhibition.
Grand Hall. Olympia, London
25-28 November
(01203) 426 471
www.apple-expo.com

Bug of the Month: email software riddled with nasties

It's been a busy time for Internet email users with potentially serious bugs in both Microsoft's and Netscape's email clients, followed by nastier bugs in Eudora Pro. It all goes to show that even commercial products are not immune from bugs and that the most rigorous testing (we assume Microsoft, Netscape and Qualcomm do test their software) can miss things.

The first bug was yet another 'buffer overflow leading to potential security breach' problem. If you give a mail client an attachment with a file name longer than 200 characters, it will crash your program. A hacker could send a name which left a specific set of instructions for your processor to run, giving them access to your computer. Patches are available from Netscape and Microsoft.

The Eudora bug, in Eudora Pro Email 4.0 for Windows and Eudora Pro Email 4.0.1 for Windows, is much nastier. Eudora uses Microsoft's HTML engine to display Web pages sent as attachments, but when it does, it automatically enables Java and JavaScript. This lets a hacker send a message which could include a link to an attached program. When you try to read the message, the program runs and, because it's 'local' at the time, the program gets unlimited access to your system. This means executable files can be launched on your system if you attempt to read the attachment.

This problem arises from the interaction of Eudora with the HTML engine. The simplest solution is to disable the Microsoft viewer (from the Options menu) or to download the bug patch (from **www.eudora.qualcomm.com**). But the real issue is how code from various vendors can interact to open up security holes. This one is going to be big.

Bug site of the month

Keep track of all the security announcements, patches and other stuff with the Vulnerability Engine from InfilSec
www.infilsec.com/vulnerabilities

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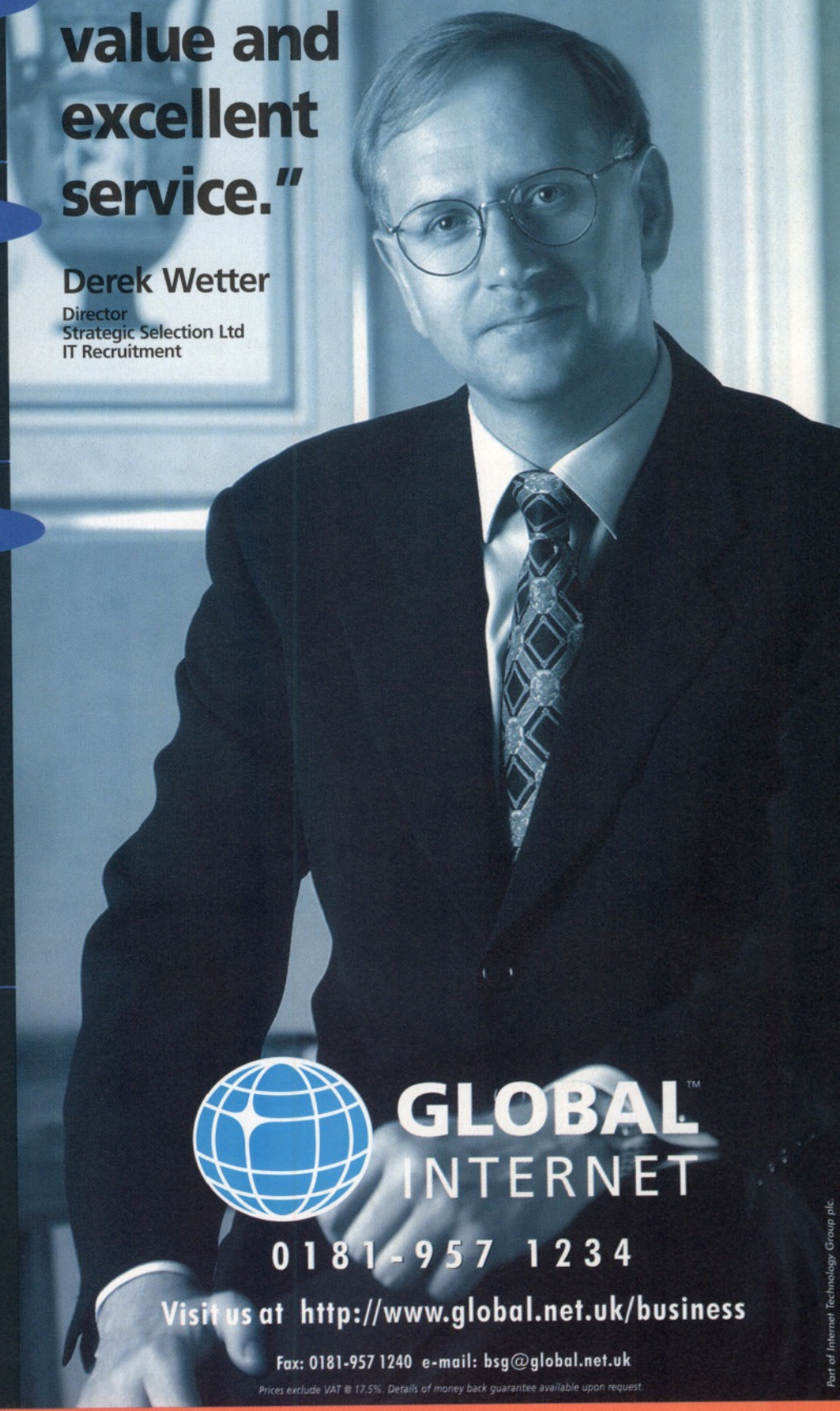

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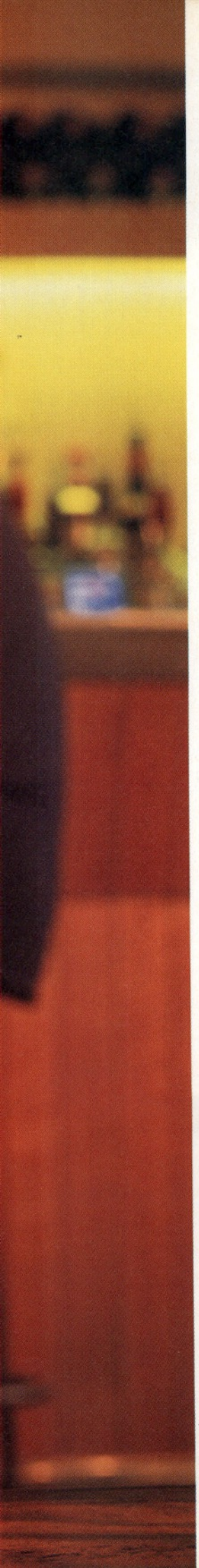

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LINX Member

Dominic Cameron, left and Ian Stewart, right photographed in London by Eric Richmond

Wired for hire

Ian Stewart, chairman, and Dominic Cameron, chief knowledge officer, Aztec

Aztec is one of the most influential Internet consultancy firms in the UK. And the guys who head it have impressive backgrounds including *Wired*, the BBC and Pearson. Their client list is equally impressive – the BBC, the FT and Fortis are all there. Mike Bracken finds out that it's a tough but lucrative market out there

Not that long ago, much talk was made of how the Net would 'empower global citizens' – breaking down national boundaries and healing long-standing rifts. It would revolutionise economies, create vast wealth, and become the basis of the digital 21st century.

If you remember this type of self-important myth making, then you're probaby doing one of two things now – cringing with embarrassment at the memory or, much less likely, still believing everything you read in *Wired* magazine. For, if ever there was an aspirational tome of its time, *Wired* was it. Preaching a gospel of west-coast liberalism fused with *laissez faire* economics, *Wired* was not slow in predicting a bright future for believers. These believers, the *Wired* citizens, are easily identifiable in Silicon Valley, but the global citizen idea simply didn't work in the UK.

Ian Stewart is the man that found the money and staff to launch the UK version of *Wired*. But those associated with *Wired UK* are often bitter about the experience. Of the dozens of people I spoke to about Stewart, about half were full of praise ("He created a global brand, and that's a fantastic achievement."), while the others highly critical. ("Probably the most anal person I ever met. A real control freak.") And none of them wanted to be named in print.

Two years after the close of the ill-fated *Wired* UK, Stewart and his company, Aztec, are employed to tell leading UK companies how to deal with the Net. It was Stewart who negotiated the £55m BBC/ICL deal that resulted in beeb.com.

Aztec boasts that the *Financial Times* and the BBC have entrusted it with online projects. But, like many consultancies, Aztec relied on previous employers for a break. Stewart had been working at Pearson, owners of the *FT*, and his partner, Dominic Cameron, has an outstanding track record at the BBC. While Aztec is undoubtedly respected, many claim that Stewart has a natural arrogance which stems from his days at *Wired*.

If there's an equivocal attitude to Stewart and Aztec, it doesn't faze him. "I'm just a background person," is his explanation. With business interests in the new media company Sunbather, and Douglas Adams' Digital Village, Stewart is unlikely to go short should Aztec fail, but many feel that if Aztec, with its connections and big money backing, cannot succeed, then what chance does the market have?

Why the name Aztec?

We had a tech base, so TEC sounded sensible. Aztec had cultural references we liked. The AZ also helps communicate the alphabet, and therefore learning.

You have two big clients, but is the consultancy market for Net companies growing?

Yes. When the team started three years ago, there wasn't much need for consultancy at all. Companies all wanted knowledge, but getting consultancy ➤

accounts was difficult. Few could justify the expense. The market is growing, though.

Will US Net consultancy companies be successful in UK?

It's interesting to see who's doing the best job. US Web is the one I have the most respect for. Their declared aim is to be the Andersen of the 21st century, which is a cute phrase. But our experience is based on practicalities, not on strategic thinking. The UK market is fragmented. US Web is trying to create larger firms that do everything in-house.

And Aztec?

Since the industry has begun to consolidate, plenty of companies have approached us. It's time to consolidate. It'll be difficult for small companies to compete. Aztec may find itself at the centre of a consolidating group.

So will someone buy you?

We've had approaches. The UK market is shaking out. You've got to either get big or get out. Aztec has to get bigger either by buying another company or by merging.

What do you do at the BBC?

We started working with the BBC in the summer of '95. Beeb.com was first, then BBC News Online, then Ed Briffa's BBC Online.

"We're not warm, fuzzy consultants concerned with ensuring everyone loves us for the next 10 years"

So why have the BBC's Net operations been so hit and miss?

The BBC's Net exposure evolved faster than it expected. Without BBC news and sport in the beeb.com operation, some plans had to change. It will certainly have cost them, but on the other hand, the BBC has a wealth of brands – it has a critical mass in terms of content.

So why did Ed Briffa (the former chief of BBC Online) leave?

The BBC is a complex and bureaucratic organisation. Boundaries between departments are fuzzy, people get in each other's way and disagree.

The way bbc.co.uk is organised – split between broadcast, commissioning and production – makes some political sense for the BBC, but it wasn't what we recommended and is unique in the online world. Certain decisions may have hurt Edward.

What decisions?

Splitting up divisions. The approach to the use of the homepage and the manner in which content was divided. Our advice was always to concentrate on what you do well, not on the way the organisation does it. Edward, for all his skills, did not have a background in the Internet. It's hard to run an operation without that experience.

And what do you do at the *FT*?

The relaunch was in April. The FT is also coming to the realise that the Internet is important to them.

Did you have problems delivering your promises at the *FT*?

We had a problem in February/ March. A conflict of personalities resulted in us taking one of our key people off the project. That made it difficult for us to do some things. When we started, the *FT* was preparing to contract with a large technology firm, which we thought was inappropriate. The *FT* took our advice, and the savings were substantial. If you talk to the owners of the place, you'll find we performed.

You were at Pearson, and Dominic was at the BBC prior to Aztec. Are you just trading on your past? What other clients do you have?

Fortis – one of the biggest financial services firms in Benelux. It's a bigger project than the BBC.

Do you upset people?

We're talking about building products and services around a medium few people understand. We don't always get the best people placed on projects. We are forthright in our views. We don't depend on consulting for our lives. Every now and then that's going to ruffle feathers. We don't mind ruffling feathers if it gets the right results. We're not warm, fuzzy, cosy consultants concerned with ensuring that everyone loves us for the next 10 years. If that means people who are less confident or less adequate get upset about it, so be it.

Curricula Vitae

Ian Charles Stewart

A photographer and publisher with works in print about Indonesia and Singapore, Stewart was also a member of the New Zealand Olympic volleyball team. After a spell at business school in Switzerland in the mid-1980s, Stewart became director of Pearson Enterprises, the venture arm of Pearson, ownersof the FT.

1989 Joined as founding partner of *Wired*
1994 Set up *Wired UK*, securing the Guardian as a partner. Turned down option of becoming chief operating officer of *Wired* to stay in Europe.
1995 Helped BBC secure £55m package from ICL/Fujitsu
1997 Took many of the beeb.com team to form Aztec

Dominic Cameron

Cameron was formerly an editor of *Newsnight* and has 20 years of digital media experience. He also co-owns Imagic, a software company specialising in weather systems.

All of our briefs have meant the creation of an organisation of 90-130 people inside an organisation already facing change. You're bound to have some nasty moments.

It's easy to blame the consultants for everything because they don't stick around. We don't mind that. We're not a consulting firm *per se*. We build new businesses for our clients. That's hard. The reason we spend the majority of our time in Aztec is the quality of our people. I have not found a group of people this talented in one place since I left San Francisco.

Has your history at *Wired* helped you get business?

I left *Wired* in an executive capacity because I didn't want to move to San Francisco. The joint venture with *The Guardian* was the last thing I did. I was sad to see the changes that took place afterward.

Why did *Wired UK* fail?

It was straightforward. The *Wired* IPO which should have taken place in '96 would have raised enough money to fund development. The private round [of investment] was at a much lower value than the IPO. The tragedy was that new investors said: you're going to have to concentrate on fewer things. They really weren't concerned with the UK.

For someone so globally active, why are you based in London?

London really is the best place to be in Europe at the moment. The number of people who understand the realities of the Net here is growing. im

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How do I break into e-commerce?

September's article on the skills needed in the Internet market was just what I've been looking for. I work in the IT industry as a jack of all trades. From system/network admin right through to development. Now I want to specialise in e-commerce.

I reckon e-commerce is the beginning of something revolutionary, and I find it fascinating. One thing your article doesn't mention is that once you've learnt about databases, JDBC, Merchant servers and so on, how do you prove to people that you understand e-commerce? Without a history in this field, how do you make the break?

Jason Simmons
J.Simmons@btinternet.com

Gail Robinson replies: I spoke to a lot of people in the industry to produce that article, and most of them seemed to be looking for that perfect mix of techie skills and business/commercial awareness. If you've got these skills and you can go into a company and explain the benefits and drawbacks of e-commerce and how it has to integrate with the company's existing systems, then you're a valuable commodity.

Web editors are worth more

The 'Show me the Money' feature in September's issue is wide of the mark in its assessment of how much a Web editor/content producer is worth. Editorial and copywriting skills can include sub-editing, proofreading, writing and asset management – and you don't get that for £15,000-£18,000. Perhaps there's some confusion in understanding what's behind the mantra, Content is King. Far from being 'grunt work', new media savvy editorial and content people are in great demand, and the going rate for the job reflects this. Typically, for an editor with HTML, writing and subbing skills, salaries start at around £25,000. This rises to £35,000 if the editor is expected to manage technical, design or marketing staff. It may not be a hugely technical role, but companies are, thankfully, beginning to appreciate that people and asset management, never mind online branding and marketing, can't be left to a 'grunt' worker.

SHOW
How much are you worth? And how much more could you earn?
ME THE
Gail Robinson tells you how to up your value on the Net market
MONEY!

Victoria Lubbock
MD, Recruit Media

Gail Robinson replies: Thanks for your input, Victoria. I agree with you that there are different levels of editorial work on Web sites. There is some basic 'grunt work' which involves relatively simple tasks such as putting copy up online with the appropriate HTML tags. These jobs are not terribly well paid. However, you're right that Web site editors who take on a broader role, such as managing staff and controlling the look and feel of the site, are quite rightly much better paid.

BT's second line trauma goes on

In the September issue, you published a letter from Martyn Porter complaining about BT's installation of second lines and subsequent Net access speed decreases. BT recently installed two lines for me – a voice line and a modem line. There was a problem because there weren't enough phone lines going to my house. Along came the engineer with the magic DAX box (or splitter). It won't affect the signal at all, I was told. So off I went and bought a 56K modem.

Needless to say, after five hours on the phone to Virgin, my ISP, and a similar time to my modem manufacturer, we couldn't work out why I could only achieve 28Kb connections. Only this morning I phoned BT and reqeusted that the gain on my line be turned up and asked if the DAX would affect my signal. I haven't heard anything yet!

Mark Collins
mark@web37.co.uk

Martyn Porter's problems with BT sharing lines (two lines for the speed of one) seem to be common, at least among residential users. However, the solution varies depending on which engineer you talk to. I was promised, if only verbally, that a 'note' had been placed on my account instructing that DAX is not acceptable, due to my modem use. I was also offered 'fixed gain' to improve my existing line's connection rate, after just one call complaining that my line had become less reliable overnight.

Since Martyn has been unlucky, I offer a solution. There may be some spare lines in his area which BT are holding back for arcane admin or marketing purposes. Gambling on this, Martyn could now apply for a third BT line, then cancel his second one. Unless the engineer is particularly on the ball, the newest line won't be moved across onto the vacated half-line.

Kieran Turner
kieran@ keymedia.co.uk

Star Letter

BT Click won't kill the ISP industry

Let's put things into context here. BT's new marketing ploy, Click, isn't free – you don't get Internet access for nothing. I see review after review saying this is a great idea as people can afford to surf now who couldn't before, and that other ISPs are up in arms about it. The costs haven't gone away, they're merely hidden. The costs in question are a penny per minute on top your phone call, and that will pay for your access. For the newcomer who merely wants to send email and dabble online (let's say an average of one hour per week) this is a good thing, as it'll only cost them £2.40 per month, cheaper than any other provider. However, if someone is online for three to four hours a week suddenly the cost goes up to between £7.20 and £9.60 per month. No different to any other ISP in the market. Let's look at someone who goes online one hour every evening and a couple of extra hours at the weekend. Suddenly the cost is a hefty £21.60 per month – more than double my bill.

Ken Wright
ken_wright@athene.co.uk

Gail Robinson replies: We agree with your arguments, Ken. For regular Net users, the BT Click deal isn't cost-effective. What's more, you don't get technical support, an email address or free Web space. What we're hoping is that BT Click will bring on board new Internet users who, once they get a bit of experience, will go for a conventional ISP account with all the benefits that brings.

It looks like I'm another BT victim. I recently ordered a second line purely for my modem (56K), to take advantage of BT's half-price offer, but haven't been able to get connected to the server if the dial-up connection is above 28,800bps. The only other dial-up connection speed I've got is 34Kbps, but at this speed I can't connect to the server. The BT helpline, while helpful, seems unaware of this problem. I reckon I should be getting speeds in the mid-40Kbps.

Eugene Kelly
Cygnusx1@btinternet.com

Hey big spender

Gail Robinson replies: The BT second line issue appears to have struck a chord with *Internet Magazine* readers. We spoke to BT about the problem and were told that "BT is aware it's an issue with some second line installations and we're taking the problem seriously and trying to sort it out." Watch out for a follow-up in next month's magazine.

Venture capital update

I read with interest Grant Heinrich's article *Hey Big Spender* in the September issue on the venture capital industry. I'd agree with Mike Beeston's comments that 'VCs just weren't familiar enough with our industry'. This lack of knowledge and understanding, combined with general technophobia, is exactly why I founded Arts Alliance last year (a UK VC which specialises in investing in online companies at the start-up stage). We're a group of people who have lived and breathed the industry, and I believe that only VCs with this kind of experience can realise the full potential of the online market.

The job of a VC is about nurturing talent and innovation – acting as an online catalyst, as much as an informed source of investment. 'Synergy' is important, but instead of limiting this to interaction between clients, which can act as an inhibitor on the range of companies in a portfolio, the synergy should extend to an external team of contacts and advisors.

My advice to people wanting to set up an online company would be to concentrate on Net-centric ideas – that is, concepts that wouldn't have existed without the emergence of the Internet. Too many new companies fail because their ideas can still be carried out more effectively by conventional methods in the short term, thus burning a lot of cash before getting anywhere. For example, large companies' failure to make any great in-roads into the e-commerce sector is due to a lack of added value – using a Web site purely as a glorified mailorder service is short-sighted and sorely underuses a potentially lucrative resource.

Thomas Hoegh
Founder and Managing Director
Arts Alliance
thomas@artsalliance.co.uk

Gail Robinson replies: It's always good to hear from UK-based venture capital companies devoted to developing Internet businesses. I'm sure our readers will find the advice useful.

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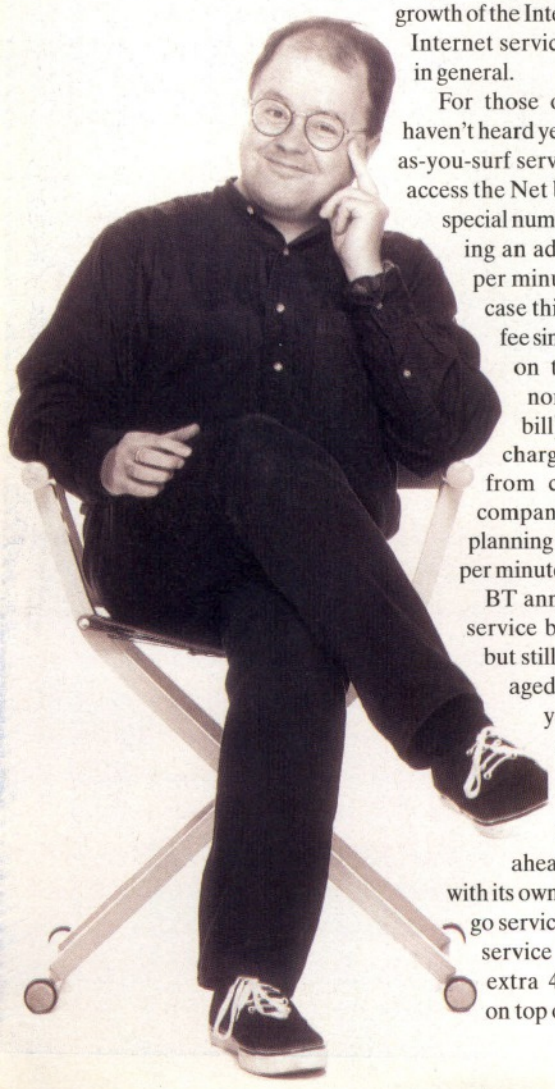
You get what you pay for

Does the launch of the pay-as-you-browse services mean the end of ISPs as we know them, or will it bring new opportunities? Richard Baguley looks at the future of the ISP industry

There's a quiet revolution going on which could change the way people buy dial-up access to the Internet. Enormous companies (including the likes of BT and Cable & Wireless) are launching services which charge on a pay-as-you-go basis for Internet access. And these new services have got some of the conventional ISPs running scared.

ISPs are panicking because they're worried about being pushed out of business by the big telcos behind these new services. I don't think we need to worry though; these changes could turn out to be a good thing for both the growth of the Internet and for Internet service providers in general.



For those of you who haven't heard yet, these pay-as-you-surf services let folk access the Net by dialling a special number and paying an additional fee per minute. (in BT's case this additional fee simply appears on top of your normal phone bill). The rates charged will vary from company to company, but BT is planning to charge 1p per minute off-peak.

BT announced its service back in May, but still hasn't managed to roll it out yet. In the meantime, Cable & Wireless has sneaked ahead of its rivals with its own pay-as-you-go service. The C&W service costs an extra 45p an hour on top of your usual phone charges (this offer runs until the end of November this year, the price goes up after that).

It's easy to sympathise with the concerns of ISPs who charge a flat fee for unlimited Internet access. When huge companies such as BT or Cable & Wireless wade into a market so aggressively, they could easily squash many of the smaller players. The big companies can afford to spend millions on advertising and have the powerful advantage of being able to promote their services via their customer's telephone bill.

"Many newcomers to the Net will quickly realise that they're missing out."

But it's not all bad news. I believe these services will encourage people to get onto the Internet and will also provide a rich vein of new customers for conventional ISPs. Pay-as-you-surf will also encourage people who may have been cautious about using the Internet to give it a try. There's no sign-up fee, and you don't have to pay a penny if you don't use the service. Hopefully, once you're online and hooked on surfing, you'll probably want to move over to a conventional monthly fee-charging, unlimited access service provider.

It all boils down to a simple question of economics. These services are only cost-effective if you use them occasionally. But what will inevitably happen is that most people will find they use the Net more often than they planned, and end up running up frighteningly high phone bills.

Consider the figures. BT charges 1p per minute off-peak for its service. It works out cheaper to buy a conventional, monthly, unlimited access ISP account if you use the Internet for more than 16 hours a month (or roughly four hours a week). And beware accessing the Net during work hours will cost even more.

A recent survey by NOP showed that, on average, Internet users have accessed the Net 5.5 times over the previous week, and spend an average of 53 minutes online each time. But if you're using the Net for that long, you need a conventional Internet access account. The figures make it clear that these pay-as-you-go services won't be the cheapest option for the average Internet user.

But aside from the financial angle, it's also worth bearing in mind what you do and don't get with these services. All they offer is straight Internet access – you get none of the ancillary services full-blown ISPs offer (such as free Web space and numerous email addresses).

There are going to be many newcomers who take their first tentative steps onto the Internet with these new services, but they'll quickly realise that they're missing out. What's more, they'll be really annoyed when they realis they could be saving money by signing up with a monthly Internet access account.

This is where ISPs could benefit – they no longer have to convince potential customers that the Internet is a good thing any more. They can leave that hard and expensive marketing work to the likes of BT and Cable & Wireless. Instead, they only have to convince customers that their way is cheaper than these pay-as-you-surf services.

Richard Baguley (richardb@internet.emap.com) is technical editor of Internet Magazine

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Demon	✗	✗	✓	15	£132.50	£132.50	£132.50	£132.50
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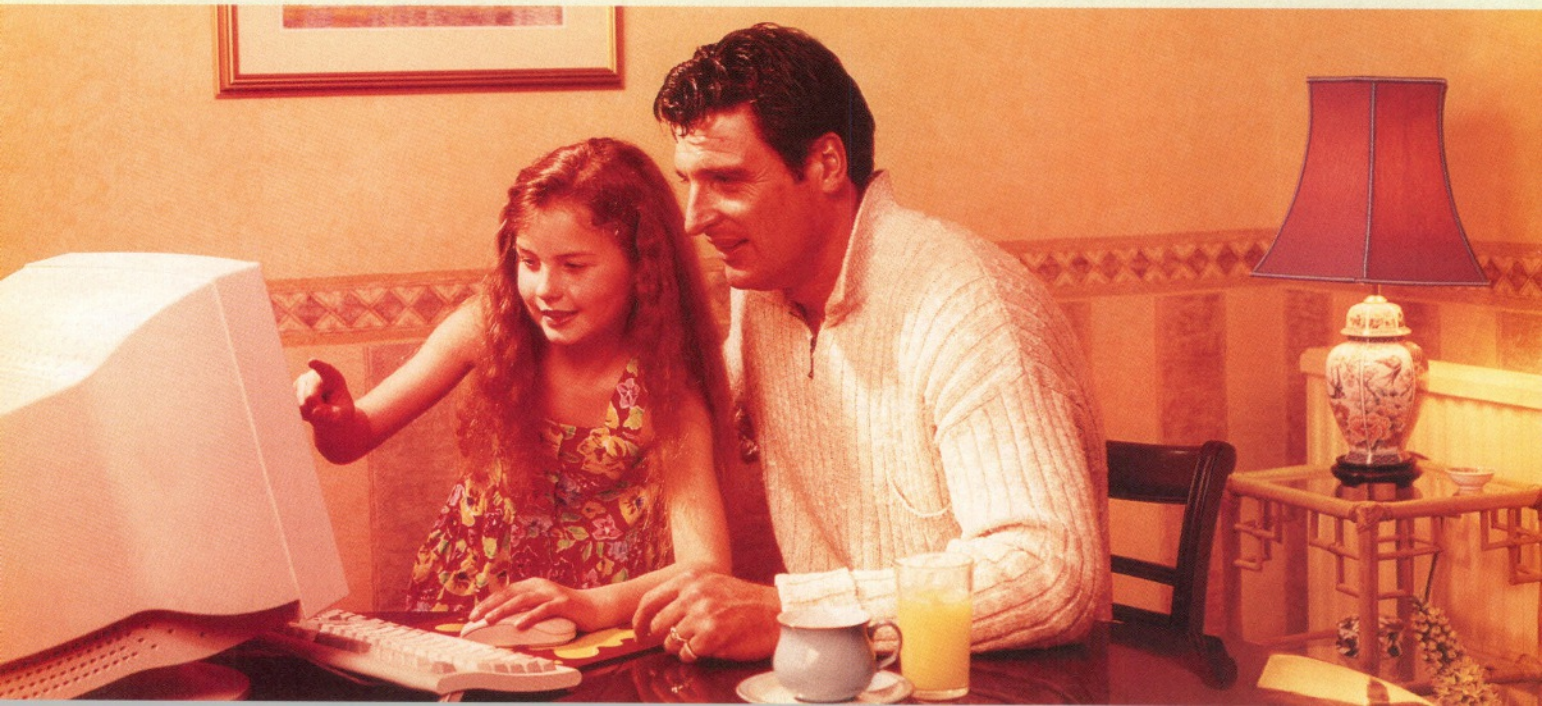

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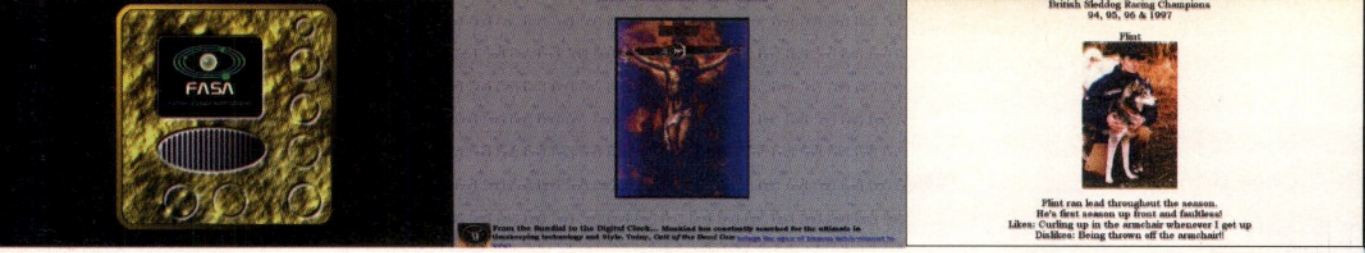
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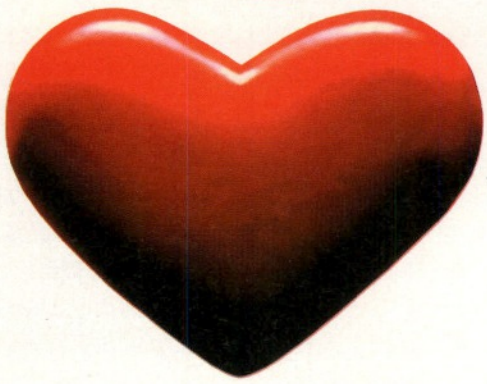
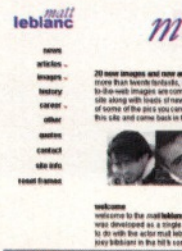
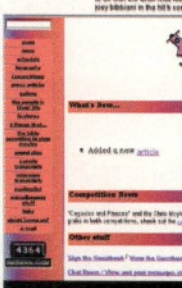
Home page is where the heart is

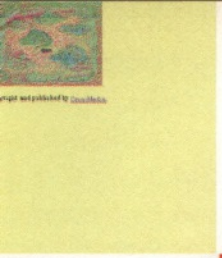
Your personal Web page lets people into your life and gives you the chance to show off a work of Web art, but it could do more. Steve Shipside visits the best homepages and tells you how to make yours a success too

Oh, show me a home, where the netizens roam, and I'll show you an ISP with a bandwidth headache. With every ISP in town now offering subscribers a few free Meg to build their own personal Web pages, we're now seeing whole Web wagon trains of personal pioneers heading out into the World Wide West to stake their claim in cyberspace and build themselves a homepage they can call their own. Nothing wrong with that, and you'd normally expect an Englishman's homepage to be his castle, visited only by him and, at a pinch, his mum. Every now and then, however, you hear of an individual's homepage which doesn't just attract visits from a few curious members of the public, but has them flocking in – so much sothat the ISP is forced to shut down the site to save bandwidth.









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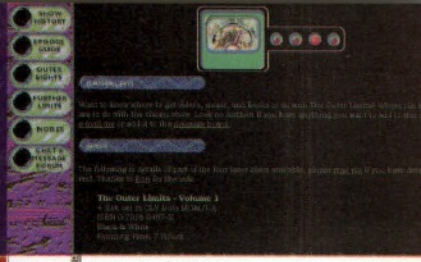

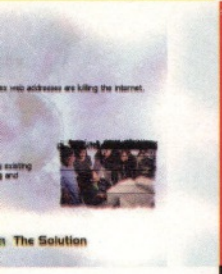
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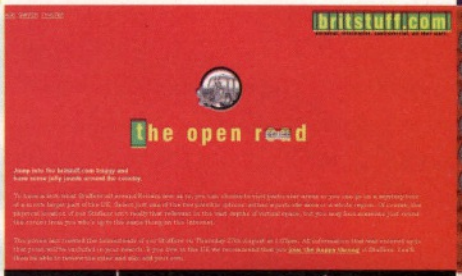
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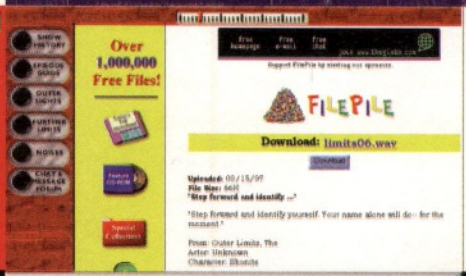
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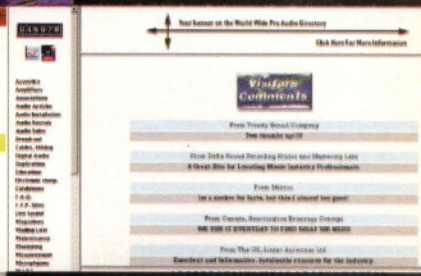

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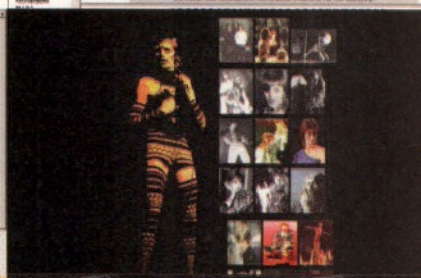
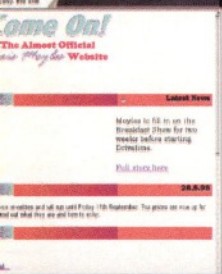
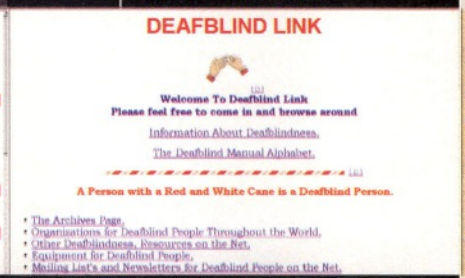
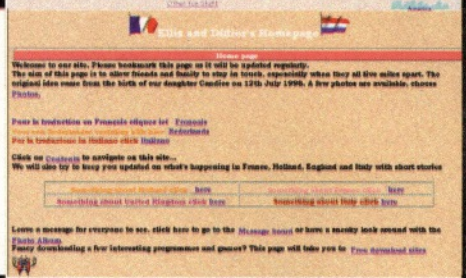
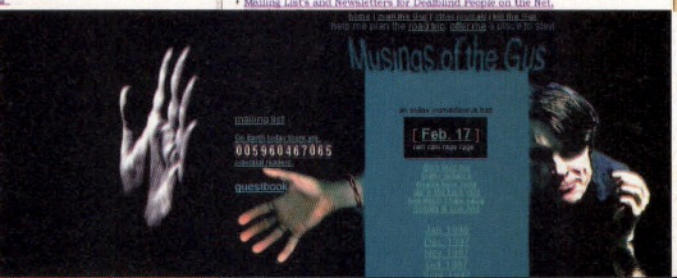


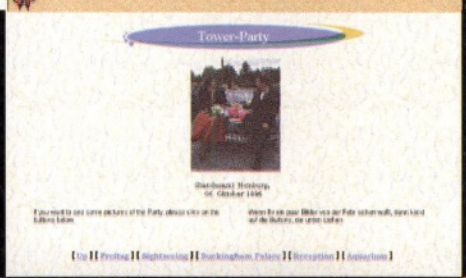

Come On!
The Almost Official


DEAFBLIND LINK
Welcome To Deafblind Link
Please feel free to come in and browse around
Information About Deafblindness.
The Deafblind Manual Alphabet.
A Person with a Red and White Cane is a Deafblind Person.
The Archives Page.
Organisations for Deafblind People Throughout the World.
Other Deafblindness, Resources on the Net.
Equipment for Deafblind People.
Mailing List's and Newsletters for Deafblind People on the Net.

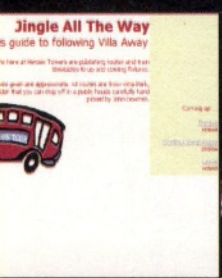

Welcome to our site. Please bookmark this page as it will be updated regularly.

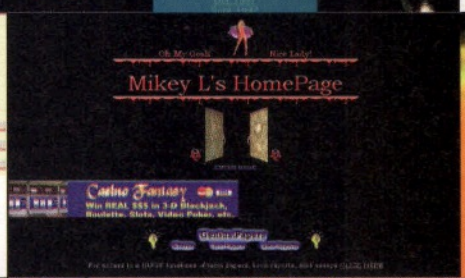
The Norwich University
Regimental Drill Team

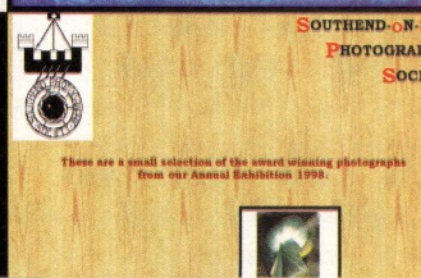

Musings of the Gus
[Feb. 17]
005960467065
questbook


Tower-Party

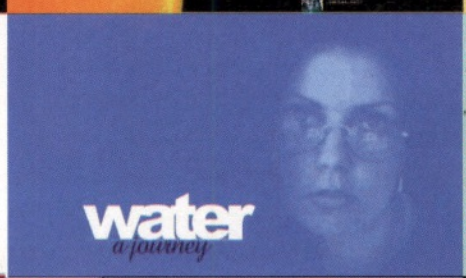
HELL'S
Buddhas

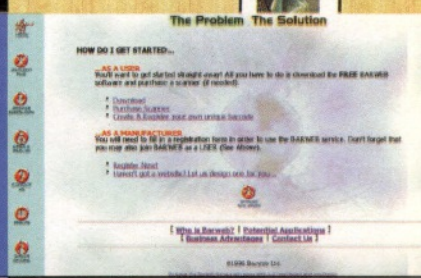

Jingle All The Way
guide to following Villa Away


Mikey L's HomePage
Casino Fantasy
Win REAL $$$ in 3-D Blackjack, Roulette, Slots, Video Pokes, etc.

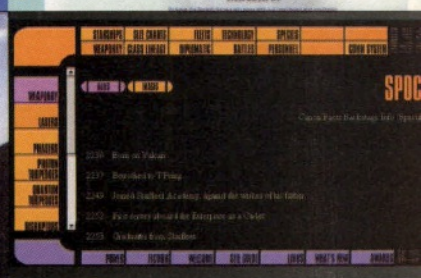

SOUTHEND-ON-
PHOTOGRA
SOC
These are a small selection of the award winning photographs from our Annual Exhibition 1998.

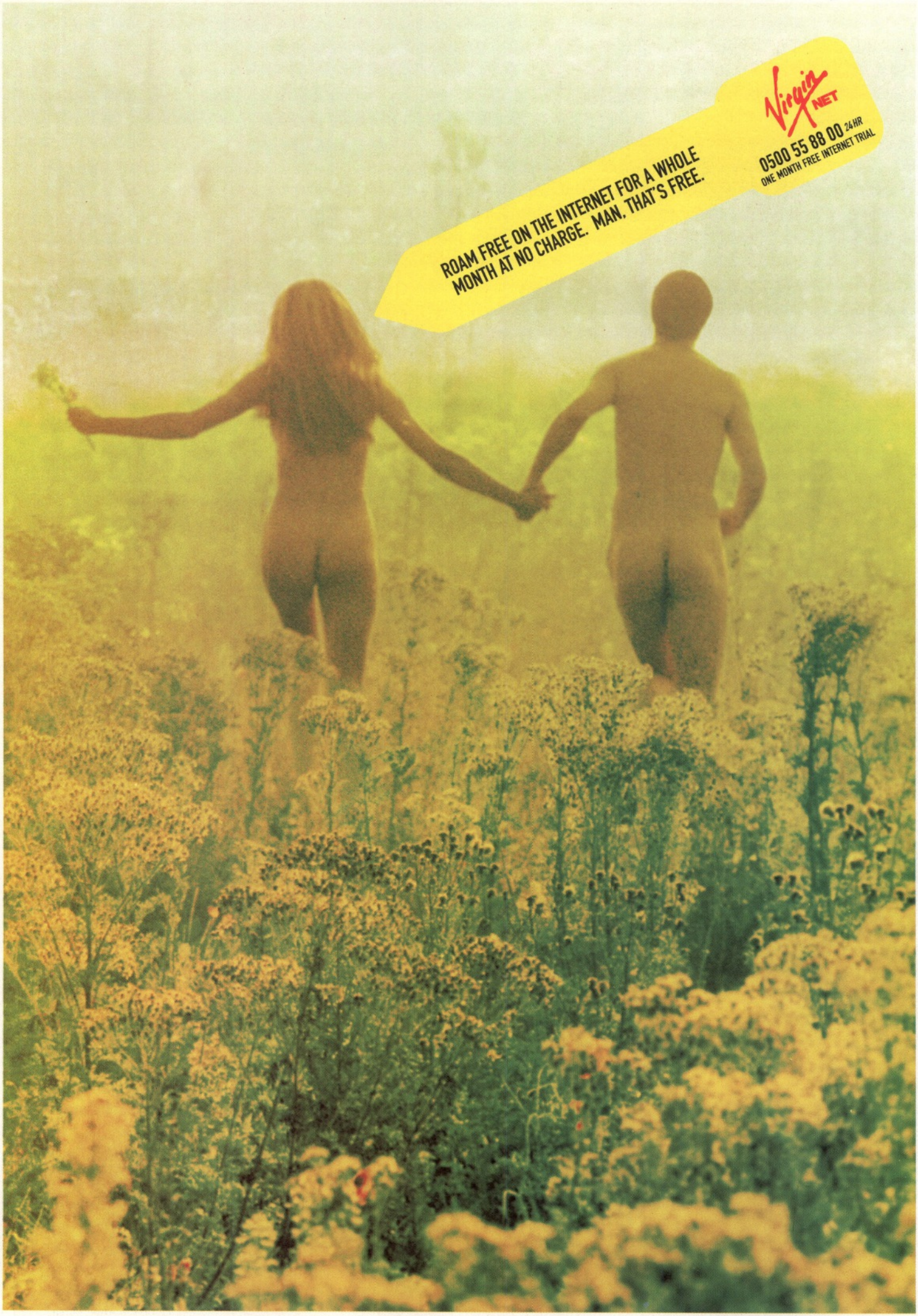
heroes & VILLAINS


water
a journey


The Problem The Solution
HOW DO I GET STARTED...

Matt & Sand's Home Page


SPOC


ROAM FREE ON THE INTERNET FOR A WHOLE MONTH AT NO CHARGE. MAN, THAT'S FREE.
Virgin NET
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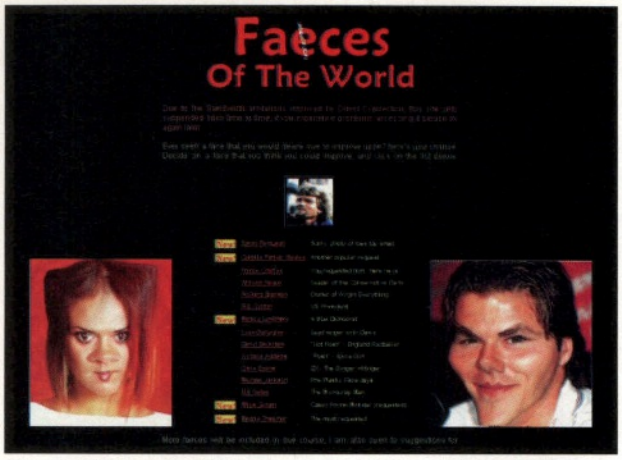
ONE MONTH FREE INTERNET TRIAL

www.virgin.net



The price of fame: a great idea and a mention in *The Guardian*, and before you know it your pages have been pulled (they make a lovely couple, though)

It happened recently to Direct Connection here in the UK. "Two weeks ago we had a guy called Tony Byrne whose site was featured in *The Guardian*'s Online section," explains Direct Connection's Emily Summers. "On the site you can open up a picture of a celebrity face, and smear it all over your screen – which clearly amused *The Guardian* [since the faces on offer include Bill Clinton, Monica Lewinsky, David Beckham, Posh Spice, and William Hague, it amused our office, too]. The guy's hit rate went from near nothing to bursting through the 30Mb bandwidth limit we impose, so we had to take it off. We shut it down from midnight until eight the next morning. If it a site busts the limit again the next day, we pull it again, and so on – with Tony Byrne's site this went on for a couple of weeks. He was on the phone to us saying 'What am I going to do?'."

"I'm happy with any response, good or bad, at least people know my page exists."

Byrne explains: "The idea for the site itself came whilst thinking of obnoxious people who would deserve having their faces pulled about, hence the name Faeces." So was he happy with the response? "Generally, I'm happy with any response, good or bad, at least people know my page exists – there's not much point in having pages up there if no one's even looking, is there?" Yes, but there's not a lot of point if the pages are pulled by the ISP either. "Yes, that is a headache, having my domain suspended for exceeding the bandwidth limitations. It stops me from doing any other projects, so a choice will have to be made whether to move it to something like Geocities, where you get the bandwidth but also your pages full of ads, or else kill the site." Since we've agreed not to add to that problem, we're afraid we can't publish the URL of Tony's site here.

Tony is truly an exception, though, and most people would love to be in that quandary. In reality, the idea of bursting the bandwidth boundary is just a pipe dream for your average homepage developer. Direct Connection's experience is that, of the thousands of personal homepages they host, a mere 5 per cent account for 95 per cent of hits. So what is it that transforms a humble home site into a hot property? With so many personal sites out there, it's hard to lay down set rules for success, but taking a look at the winners of AOL's monthly 'Stately Homes' competition, and the finalists for the Personal Site award in the recent Yell awards, a certain pattern emerges. There are essentially three ways to get Joe Public beating a path to your door – stir up controversy, present something so left-field no mainstream site exists for it, or (and this is the most difficult, and most satisfying) take a subject and offer an amateur take on it that is as compelling as any professional rival.

Controversy

The controversy angle works on word of mouth, and usually only results in temporary peaks. The most recent case was an American student who started a site on his university computer complaining about old people. That became famous largely because the university threatened to shut him down after complaints, resulting in a flood of pro/anti censorship interest that deluged the site. Controversy is a simple, but ultimately limited way of pulling them in. Still, if that's all you're after, you could try launching the We Love David Beckham site.

Wacko

The left field approach is best for aficionados of the truly bizarre, but it can pay off spectacularly, as Tony Byrne shows. The overall winner in the Personal Site category of the Yell award was another weird offering, in this case **www.circlemakers.org**, a site entirely dedicated to crop circles. Not all that gumf about how they're caused by aliens, oh no. Just hints and tips for those dedicated to rolling their own, whether in the cause of art, or simply to hoax unsuspecting crop circle believers. The reason why it won the award is partly down to stunning design, including nice use of photo negatives and a consistent theme of colours and fonts. The reason why it's a popular home page is partly that, partly the originality of the content (after all how many other sites do you know about immaculate hoaxing?), and partly because the 'truth is out there' subject matter is perfect for a personal page on the Web. Conspiracy theory sites abound – just try searching on the word Elvis. This is definitely an area where the personal homepage has the edge, since professional sites, or indeed anything that smacks of commercialism or authority, are a major turn-off for the conspiracists (and other paranoid psychotics in general).

Excellent design and a top choice of wacky subject matter made Circlemakers a winner

Home Improvements

Tony Byrne's tips for homepages designed to burst the bandwidth for your ISP

Assuming you've got your 'first' page out of your system and have said hello to your mum from the WWW...

- First, have something to say or show that you think people will be interested in.
- Keep the pages as clean and uncluttered as possible, NO <blink> tags and other rubbish like that.
- Try and keep blocks of text to a minimum, people's attention span is far less when reading from a screen.
- Decide on what font and colour scheme to use and then stick to that theme throughout the pages.
- Don't load your pages with unnecessary GIFs and the like – they'll load faster.
- Don't be frightened to experiment, or browse other peoples pages for ideas (everyone's at it) to see if they'd work for your pages.

We at Internet Magazine would also add that while scouting around for ideas to steal, try to get a feeling for similar sites out there and think about how you can add a different and unique slant to that. Also on a cautionary note, tempting though it is (particularly for fans of music and film) to stuff a site with sound samples and video clips do bear in mind that a lot of that will be in clear breach of copyright. You only have to spend a few minutes on the Web to see that this goes on all the time, but remember that if you are truly successful, and your site gets major public recognition, it may also bring you onto the lawyers' radar screens. Either get legal, or be ready to pull any offending material.

Domestic disasters

No nos for homepages

Family snaps
Your sister and your cat are adorable. No, really. But if you want more than your family to visit the site, keep the snaps safely in the shoebox where they belong.

Spelling
Do check spelling and grammar in your text – there are some very clever people out there, people who know what adverbs are and everything, so don't let them think you're the global village idiot.

Go easy with those fonts and colours
Dolly mixture design will have people reaching for the back button faster than they can say 'yuck'.

Keep it simple
Fat files mean slow downloads and if your visitors are just idly curious then they won't hang around for long.

Outdoing the pros

The third main category of personal site that pulls 'em in and packs the cyber living room with total strangers is the homepage that competes successfully against mainstream equivalents. Not surprisingly, this is the most difficult to pull off, but such is the nature of human optimism that it's also the most commonly attempted.

This is what you're up against – the All Saints homepage can take on all comers

The reason for this is simple – there are droves of little cyber homepages on the prairie run by people who are convinced they are The World's Biggest Fan of something or other, and have the bumper sticker to prove it. Such people inevitably decide to turn their hosted space into a shrine to their idols which, if not always successful as a crowd pleaser, at least it does provide a healthy alternative to stalking. Unsurprisingly the majority of such sites are dedicated to music artists.

Standing out in the face of such opposition is never going to be an easy task, so it's all the more admirable that this month's pick of the homepages on AOL boasts two such examples, Whatever, an Oasis fanzine, and The Jarvis Cocker Appreciation Page. Both come highly commended for discographies, lyrics, and of course samples (ahem, careful of copyright there), but if you want an idea of what you might be up against, even in the home page arena, take a look at **www.theallsaints.com**. From the registered domain to the slick graphics this has all the hallmarks of an official, multi thousand pound record company site, yet was a runner up in the Yell awards personal category. If your initial response is that this has to be the work of professionals you wouldn't be far wrong and here's the rub of home page stardom – a lot of the best pages are also billboards advertising the skills of the designers who created them.

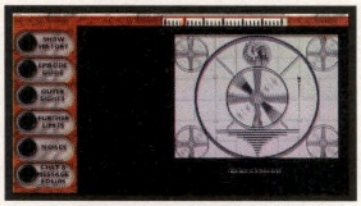
"When I left Omnimedia I created the site [**www.greatstuff.demon.co.uk**] to show what I do," explains Web designer Rob Mettler. "I put up examples of ShockWave games as a resumé, with the original intention, as a freelance, to pepper it with content and create a gaming zone." This didn't turn out to be necessary since Rob promptly got a job, but having the home site "didn't hurt".

Similarly, clubber and Web designer Rob Corradi set to work creating a personal site that would be both service and showcase at **www.mixedup.com**. "Rather than sit down to a Web site saying I'm a multimedia designer, and this is what I do, I thought I'd do something that interested me in itself. So I created a site where people interested in clubbing and music can gather, with the plan to launch a message board system an events calendar as well as real time chat and a database for people to plug in their names and interests. The idea is that if you're going to Leeds or Liverpool or whatever you can contact local clubbers to find out about the area. It's a lot of work now, but in the end it will be automated, and it won't cost anything for the reviewers and subscribers."

Rob Corradi's Mixed Up site combines service and site skills showcase

Labours of Love

Not all high profile homepages are music based or (purely) self promotional – some are simply labours of love. If the dedication of the creator is apparent, almost any subject can fascinate the visitor. Take a look at Brendan Dawes' *Outer Limits* page (**www.subnet.co.uk/brendan/outerlimits.html**). The clean design of the black and white TV introduction sequence is followed by the period look wood finish, push buttons and dial TV interface – all convincingly authoritative before you even take a peek at the content.



Do not adjust your monitor, it's just Brendan Dawes' tribute to *Outer Limits*

Brendan's page (another Yell nominee) scores highly by combining a soupçon of wacko with a standard of design and content that effortlessly outdoes the pros.

The gutting thing about a personal site on a common subject like music or TV is that you always run the risk that the official sites will clock your efforts and cherry-pick the best ideas. There is even the danger that they will attempt to close you down, as the BBC notably did when its comedy programmes spawned unofficial sites truer to the spirit of their subject matter than early official offerings.

If the dedication of the creator is apparent, almost any subject can fascinate the visitor.

Secrets of success

Several factors contribute to a happy homepage, just as they do with professional sites. The subject matter, quality of content, look and feel of design, ease of navigation – all of these should be taken into account. The first step is to clearly identify your goals. Why do you want others to come to your site in the first place? Is it just the thrill of watching the site counter tick over (in which case you might just as well post hamster porn pictures)? Is it to promote your design or coding skills? Or is it to gather a community around a subject close to your heart?

If your aim is to promote yourself, then you'll need to serve up the best of your speciality, but don't forget to make it palatable to all. If you're just creating an online CV, you might not be looking to attract passing trade. But if you want to get noticed, your awesome Flash talents alone will not be enough to to pull the crowds.

You're going to have to offer content that isn't available elsewhere. If your interest is particularly obscure, then so much ➤

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the better. Create the first online fanzine for the Dell Orto carburettor, complete with MPEG movies of slide valves in motion and streaming audio of the inlet roar and you will attract a small, but select following. There's much more to personalised content than the information itself, however. Not only is it hard to find a subject that's not covered elsewhere, but even if you do specialise in the arcane you'll find that you can rake in many more visitors by your attitude towards existing information. The Net is an informal place, every day is casual day in cyberspace, and one of the key features of successful non-official sites is irreverence. Take our cyber carburettor site. On its own it might attract the occasional visitor from a petrolhead engine fan. But add a *Top of the Pops* chart of engine noises, or a music mixing feature so visitors can create their own Hip Hop/ Drum 'n' Bass classics using carburettor noises, and you then have the kind of quirkiness that gets site counters ticking and people talking.

Which is what it's all about really – you can have the most poptastic pages on the planet, but before you can upset your ISP you're going to have to generate some publicity. Word of mouth is a powerful thing, but mass media still has the edge. One problem you may have is that if your Web space is hosted by your ISP or came as part of a free server space deal then the chances are you have a less than memorable URL. Someday you may be able to register a more instantly recognisable domain name, but until then if you want people entering your address correctly then you'll need a little help from your friends to get it in front of your potential admirers. Getting mentioned in a newspaper, or *Internet Magazine* is a great way of building traffic, as is making it into the ratings or recommendations of the likes of AOL, Compuserve, and so on.

Don't be backwards in coming forwards when it comes to these things – email people telling them just how good you are (*Internet Magazine* included). Set up appropriate links – when you come across a home page you admire, get in touch, see if you can set up a mutually beneficial link between the two.

Finally, if you are serious about improving your homepage for a bigger audience, why not drop by and have a chat with others doing just the same. Over at Britstuff there is a site dedicated to reviewing personal pages. You can get feedback on what's hot and what's not, add your reviews to other sites, and see what others make of your own. Don't take it too personally, and play nicely; it's at **www.britstuff.com**. im

The top 10

We asked the big ISPs to pick out the most popular sites hosted on their free Web space servers. Many thanks to Direct Connection, Virgin Net, Demon and Brit Stuff for their help in compiling this list. Here's our pick of 10 of the best UK homepages, in no particular order

Heroes & Villains
Unofficial Aston Villa online fanzine. Well designed in the distinctive claret and blue of The Villa with heaps of content from enthusiastic supporters. Congratulations to editor David Woodhall and webmaster Mac McColgan.
http://freespace.virgin.net/mac.mccolgan/h&v/index2.htm

Jules Grafix
In keeping with the spirit of the Web, Jules has very kindly made a good selection of borders, bars and assorted Web graphics available for download. All she asks is that you let her know how you're using the artwork.
http://vzone.virgin.net/julie.bakewell/julie.htm

Paul Van's homepage
17-year old student Paul Van has made nice use of graphics on his simple site dedicated to all things Paul Van-related. Check it out and contribute to the interactive novel, and choose from the selection of free downloadable GIFs.
http://wkweb4.cableinet.co.uk/Paul-van

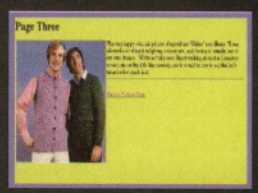
BowieWonder
Unofficial but comprehensive site dedicated to the thin white Duke and built by superfan Paul A Kinder. We especially liked the jiggling David Bowie on the front page and the Bowie jokes in the Funstuff section.
http://freespace.virgin.net/paul.kinder/BowieWonder.htm

Ben & Jack's fantastic homepage
OK, we were going to avoid pictures of kids, but this is an impressive site from budding Web designers. Check out the sequence of shots showing Ben and Jack on the same bench at various ages. They might have had help with the copy, though.
www.blume.dircon.co.uk

Unofficial Matt LeBlanc homepage
Ric has a huge selection of Matt LeBlanc pics, trivia and words of wisdom. Matt on the Internet "All the other cast members on *Friends* talk about the Internet every day. I guess, what the hell, maybe I should get online, too."
www.users.dircon.co.uk/~ric/fleblanc/leblancf.html

Daystrom Institute Technical Library
A Trekkies delight, Graham Kennedy has designed a site that looks like a *Star Trek Next Generation* console. Covers all the *Star Trek* series, endless detail about the crafts, personnel, weaponry... Graham, you really should get out more.
www.adeadend.demon.co.uk

B*Witched
Designed by 17 year old Christina Sparshott, this puts many official band sites to shame. The latest single in Real Audio, a noticeboard, gig dates, postcards, and even an exclusive accapella track. Well, it helps when you're a friend of the band.
www.btinternet.com/~sparshott/bwitched.htm



Handbag
Handbag is an online magazine "dedicated to the 55 year old lady called Edna who lives in all of us". The design could be better, but the content is funny and well written. Top fashion tip – ponchos are back in.
www.ling.lancs.ac.uk/monkey/ihe/paul/handbag/home.htm

Miguel Ripoll homepage
This a professional Web designer's site, so you'd expect it to look good. It's a great example of how to do an online CV successfully. Woo potential employers with great images and short snappy text. Worth visiting to see how the pros do it.
www.gpd.dircon.co.uk/launcher2.html

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Sex

Porn is the driving force behind much of the technology for the Net. David Bradwell explains how dirty money has pushed the Net forward

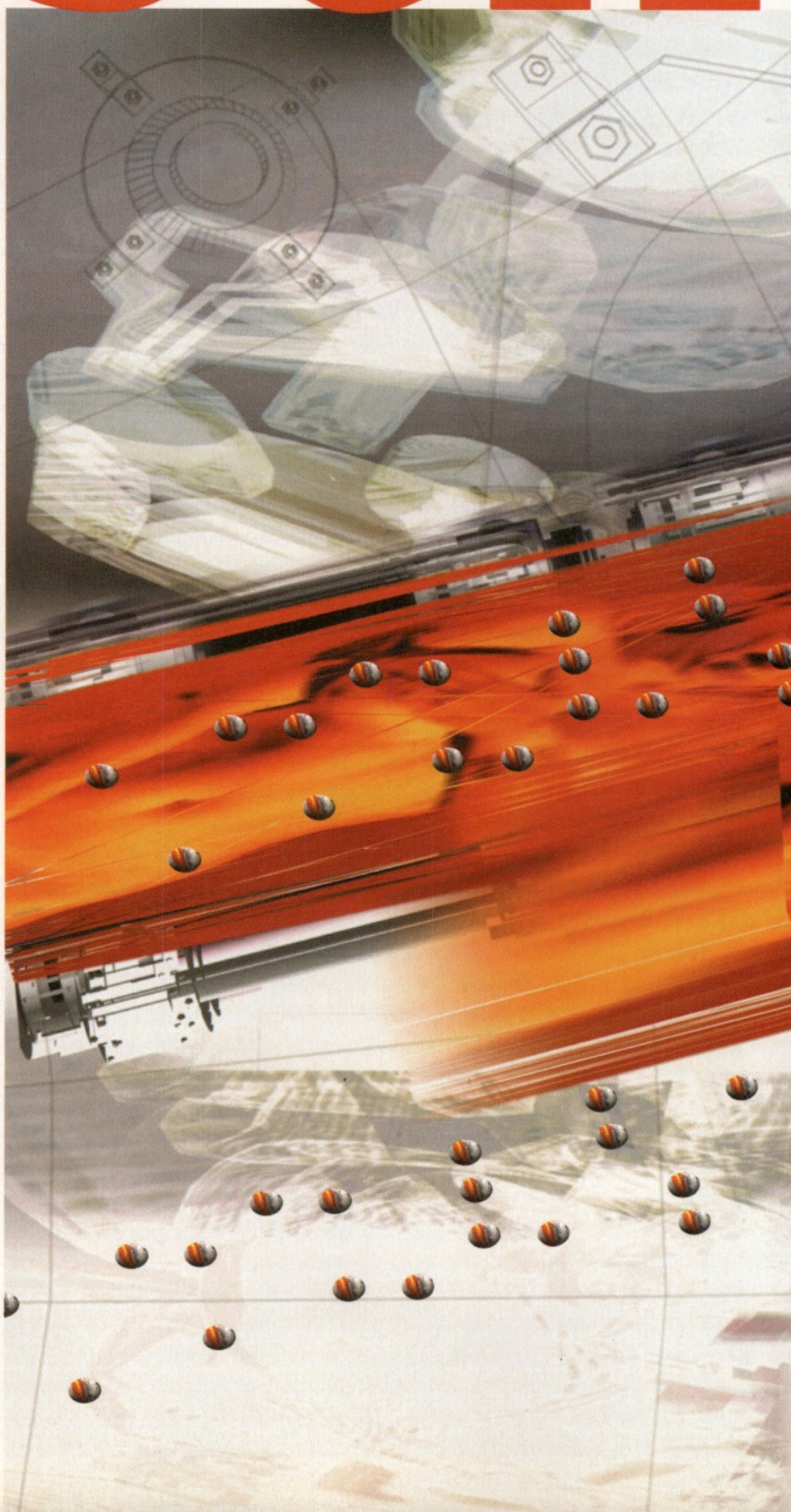


Illustration: Ian Craig

STOP! I can guess what you're thinking. It's either 'I do not believe *Internet Magazine* is promoting pornography, I must write a letter of complaint', or 'Excellent – about time there was a bit of smut in my favourite Net mag'. Love it or loathe it, adult entertainment is thriving, and nowhere more so than on the Web.

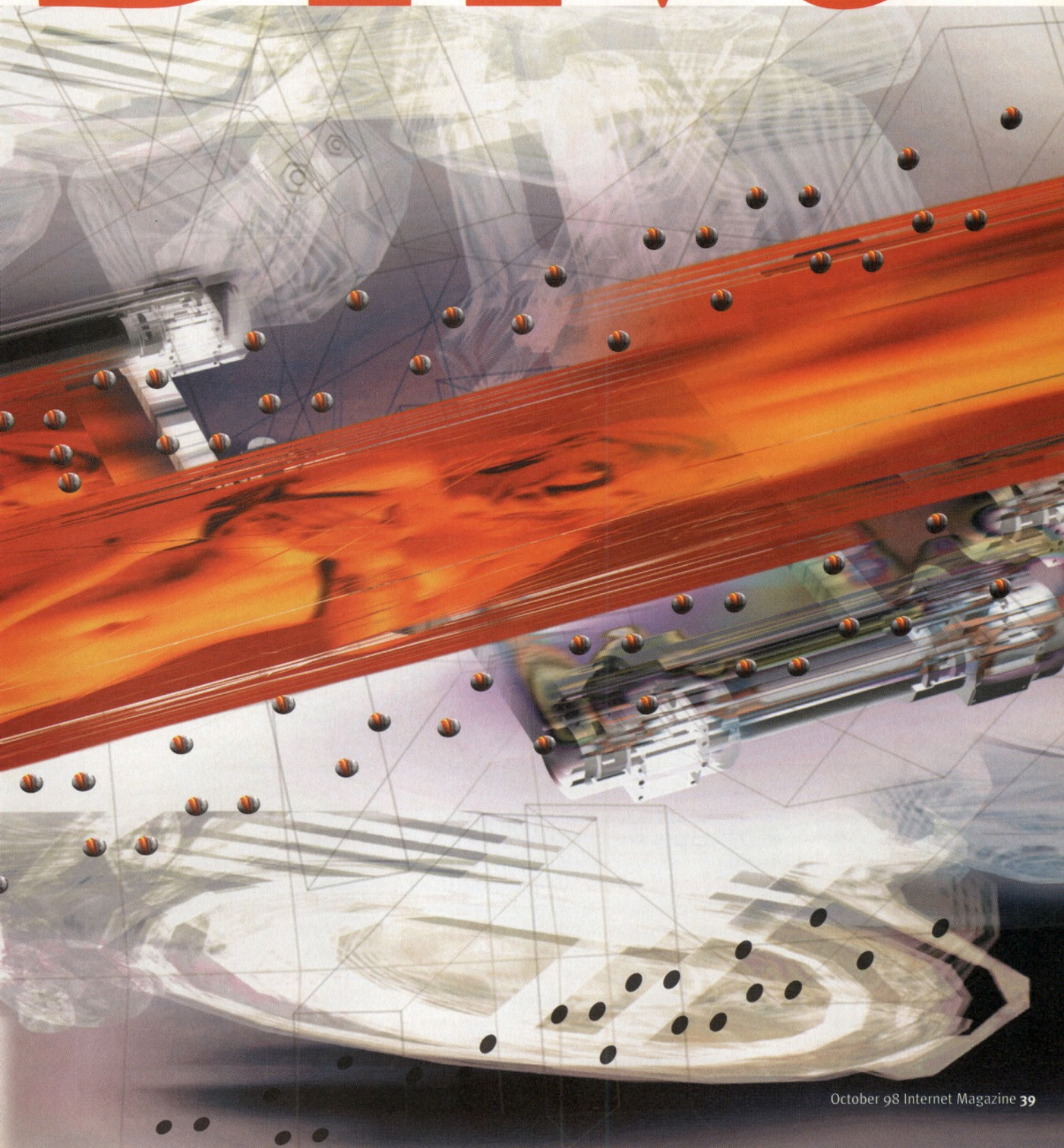
Porn on the Net is a multi-million dollar business. This article is neither an attempt to condone nor condemn it, but rather a look at the huge influence pornography has had on the Internet and how that affects us all. You might not like pornography. You might never wish to visit a pornographic site, but even if you just use the Web to order obscure CDs or cookery books, you're employing technology that was founded in smut.

Pornography has made the Web a viable medium for conducting electronic business. And as the first of millions of porn dollars started to flow across the network, adult Web site publishers pioneered much of the technology we take for granted today. But as well as huge, scalable servers, database-driven Web publishing, live chat, online video, and two-way video-conferencing, porn has also led the way in online marketing, advertising and sales techniques. Show me a good idea on the Web and I'll show you its origins or influences in the murky world of adult entertainment.

A history of innovation

It's not all charity though. Adult Web site publishers do not innovate simply to be at the leading edge of technology. They do it because there's money in it – millions and millions of dollars. There are two ways of looking at this: because the porn sites make millions, their owners are in the happy position of being able to invest in the latest technology. Many adult sites have ➢

Drive



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development budgets that make ordinary webmasters weep. These huge investments, in turn, make that technology available and more affordable for the rest of us.

It's not the first time porn and technology have been bedfellows. When Polaroid introduced its first instant camera, it was snapped up in its thousands by exhibitionist couples who wanted to take sexy photos of each other without running the risk of being caught red-faced collecting the prints from Boots.

Video recorders were introduced in 1975, and the first video rental stores appeared in 1977. Suddenly sleazy adult cinemas closed down because people could rent or buy adult movies to watch and 'enjoy' privately at home. In the early days porn was credited for the huge growth of VCR ownership – especially as the big Hollywood studios didn't start releasing their blockbusters on tape until 1979. Like the Polaroid instant camera, the camcorder enabled couples to take DIY porn to a new league. As well as football, dubious foreign sex channels have been the primary motivator for people buying satellite TV systems. Technology offers the next big thrill and enables access to adult material from an ever-widening range of sources.

month. The site is just 18 months old. Former soft porn actress Danni Ashe started her own site as a way of promoting her acting career. Danni's Hard Drive, as it's known (**www.danni.com**), is expected to earn more than $2.5 million this year. A Canadian company, Starnet, publishes a wide range of erotic and gaming sites (**www.starnet.ca**). It was founded three years ago by three friends with one picture that they charged visitors one dollar to look at. The company recently floated on the NASDAQ stock exchange in the US for tens of millions of dollars. The Seattle-based Internet Entertainment Group (**www.clublove.com**), which publishes its own adult sites alongside well-known brands such as Penthouse, is expecting to generate $20 million of revenue this year. And here's the real choker: the chap who runs it, Seth Warshavsky, is only 24.

US market research company Zona Research predicts Internet users will spend $560 million this year on access to adult Web sites and associated merchandise. Perhaps 60-70 per cent of all Internet traffic is adult in nature. That's a hell of a lot of packets, but streaming video and high-quality pictures demand vast amounts of bandwidth. You may think this a sickening waste of resources. But ➢

Zona Research predicts Internet users will spend $560 million this year on adult sites

When the Internet was just starting to gain widespread appeal, there was a huge media outcry about the ease with which users could access naughty pictures. In those days, flourishing newsgroups and lack of e-commerce technology meant virtually everything was free. But the irony of that outcry was that it encouraged many people who would never have dreamt of buying a computer to do exactly that and to get online for the smut. That's not to say that everybody on the Net came just for the pictures, but Traci Earl, who runs the successful unauthorised celebrity site Babylon-X (**www.babylon-x.com**) believes it's a major driving factor.

"The traditional magazine buyer runs the gauntlet of the checkout and bears the stigma of the raincoat, as it were," she says. "On the Internet there is no stigma at all. Most men, I believe, would think they had failed in their responsibilities if they didn't check it out. About 90-95 per cent of males on the Internet have checked out the porn, but probably only 10-15 per cent would buy a magazine. That gives a clear indication of why porn on the Net is such a huge market. It has affected the sales of magazines and will continue to do so. Magazines are becoming increasingly redundant."

The goldrush

Let's look at the numbers. Examples abound, but here are four to quicken your heart rate. Babylon-X has around 75,000 members and returns a cool $150,000-$200,000 profit after costs... every

Getting in on the act

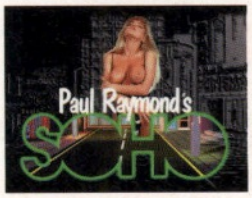
One million dollars a month could be enough to persuade even the most sceptical to cast aside their aversions to the adult industry and hop on the bandwagon. The bad news, though, is that the first phase of the goldrush is now drawing to a close. The big sites are making so much money they're constantly raising barriers to entry for everybody else. Unless you have the resources to compete or can find a hitherto unexplored niche, you'll struggle to make much impact.

Traditional British publishers of top-shelf men's magazines have not had as much success on the Internet as their US counterparts. There are several reasons for this. The US 'build it and they will come' mentality is at odds with the more cautious British approach of 'show me the profit before I invest'. Also, while UK publishers may have extremely well-known magazine brands, they cannot compromise the values of those magazines and flout UK law by publishing images as risqué as competitors overseas. If the Internet has done one thing, it has shown just how archaic British pornography laws are, and how the UK imposes far, far stricter censorship than every other democracy in the Western world.

As for the UK magazines, *Knave* and *Fiesta* have been around on the Net for some time, albeit in a quiet way, but the Paul Raymond Organisation (PRO), publisher of market-leading titles such as *Club International*, *Mayfair*, *Men Only* and *Razzle*, has been cautious to the point of inertia. The first PRO site was launched a couple of years ago, but the plug was pulled when it failed to rake in huge profits after the first three months. The company's non-savvy approach meant it recently missed out on the domain **www.paulraymond.com** (a joyous rival snatched it as recently as July this year), but it will be launching another site soon.

The new Paul Raymond site (**www.sexclub.co.uk**) is being constructed by DivaNet – part of the Global Communications Group. Global is a huge player in the UK telephone sex industry.

The new Raymond site will be available both on the Web as a conventional pay site and on dedicated servers with per minute billing on a premium rate phone number. It will, however, still have to make up for lost ground. And, ominously for conventional publishers such as Paul Raymond, sales of top-shelf magazines in this country are in steep decline.



Buyers beware

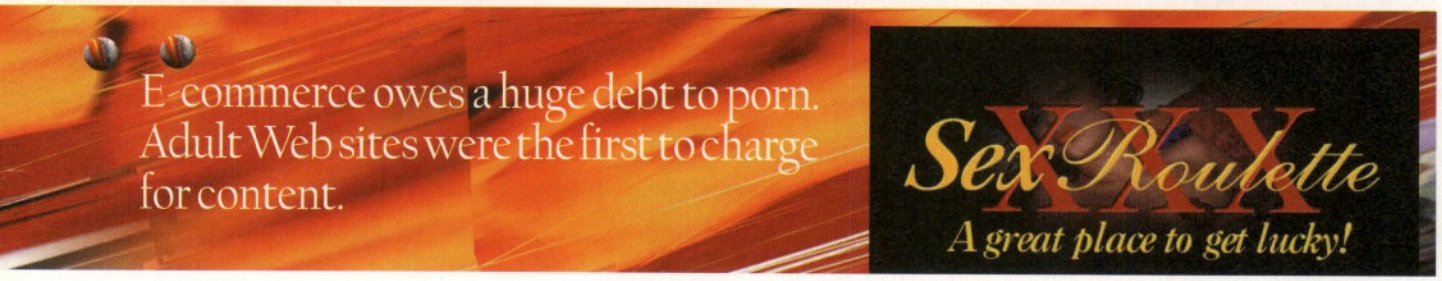
Heard the expression 'a fool and his money are soon parted'? In the sex industry you don't even have to be a fool. Everywhere you look there are scams and rip-offs – from strip joints in Soho that charge £130 for half a pint of non-alcoholic lager, to shops, magazines and Web sites that all promise more than they can possibly deliver. And yet nobody ever seems to complain. Customers in the skin trade are on the bottom rung of the ladder, and nobody ever owns up and pursues a legitimate complaint. If they did, the industry would collapse within days.

The Internet is sadly just the same. Free memberships are not always what they seem, some sites will charge you $2 just to reply to your email, and many, many sites leave a bitter taste that tarnishes the entire industry.

Some scams are quite clever though. You've no doubt heard about Mike and Dianne – two virgins who decided to lose their collective cherry live on the Web. Their site, (**www.ourfirsttime.com**) was to be hosted by the Internet Entertainment Group (IEG) accompanied by huge worldwide publicity. The event (which has since spawned numerous imitators) never took place, although traffic to IEG's Web sites went through the roof in the lead-up to the non-event. Genius on behalf of IEG? You would think so, although the company is now washing its hands of the whole affair.

The following comes from a statement on IEG's flagship site, Club Love: "Internet Entertainment Group announces it has severed all relations with Ourfirsttime.com after investigating what appeared to be gross misrepresentations in the intentions of 'Mike and Dianne' and discovering their plans to hoax the media and the world."

In other words, Mike and Dianne were pranksters. They were going to con everybody by saying people could watch the act for free, and yet when they arrived at the site they would be charged around $5 for the, ahem, 'privilege'. As soon as IEG found out, they pulled the plug. Of course they did! And obviously they will refund everybody who visited and joined Club Love after seeing the Mike and Dianne hype. Er... no. You could argue this was a masterful piece of manipulation by IEG, although the company denies it. IEG CEO Seth Warshavsky refused to answer our questions ("Seth has been extremely busy and has been unable to attend to the questions for your article," said a spokesperson). Remember, Club Love is in the million dollars per month bracket. It's not hard to see why.


E-commerce owes a huge debt to porn. Adult Web sites were the first to charge for content.
XXX
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without that demand, it's arguable whether so much investment would take place in new, high-speed networks that benefit us all, nor whether the Internet itself would be verging on the ubiquitous.

Pushing technology

It's undeniable that the demand (and consequent supply) of Internet erotica has led to huge leaps in the development of Internet technology. Starnet's chief operations officer, Jason King, agrees. "The adult industry has been the driving force behind many of the major technological advances on the Internet," he says. "E-commerce would probably have taken much longer to get off the ground if it weren't for webmasters on adult sites demanding the technology. In our case, we had to convince the Bank of Montreal here in Canada to work with us on developing a direct link into the bank. We were the first Internet company in Canada to provide e-commerce, and it was all a result of our adult business."

Following the maxim of where there's a willie there's a way, here are 10 top ways in which porn has changed the Internet:

1. Streaming video is the most fundamental. RealNetworks won't tell you this publicly, but some of its biggest Internet RealVideo customers are pornographic sites. As Jason King says, "We were the first on the Internet to provide live streaming video, and this was copied by every other adult site out there. This provided a market for the streaming video companies and thus new technologies emerged. Other uses for video became available because of this development, as well as an obvious drop in cost."

Adult sites are now also pioneering Java-based video technologies such as Emblaze.

2. Interactive video was also launched on the adult Web. Numerous sites now let users log on and watch the video, while typing messages and instructions to the model and even using Java to physically zoom the camera in and out and move it round the room. It sounds impossible, but it works. Web development company RSI is working on a digital fantasy studio, in which you can watch and direct a photo shoot using Java to control the camera. Then, when you click an onscreen button, a full-size, high-definition still is captured and automatically sent to you. Visitors can take genuine, original, studio-quality photographs from the other side of the world.

3. E-commerce owes a huge debt to porn. Adult Web sites were the first to charge for content, and that meant secure, fast credit card payment systems had to be developed. Adult sites have also devised multiple billing schemes, charging by the month, minute or megabyte. They're also responsible for combining e-commerce and existing technologies. You can buy time on sites simply by calling a premium rate phone number and holding on long enough to amass a sizeable phone bill. Some sites let you dial into them direct, bypassing the Internet, by calling a premium rate number on your modem.

4. The enormous traffic levels of the biggest adult sites have led to the development of hefty multi-server Web hosting systems. Huge numbers of registered users have led to highly complex yet fast membership and payment systems. These have been developed to prevent multiple log-ons with the same user name from different IP addresses. All these technologies are now in use on large non-adult sites.

5. It's not necessarily a good thing, but adult sites have taken newsgroup and email spamming to new heights of naughtiness. Spamming is a crude but reasonably effective way of publicising sites. As a result, it's now possible to download 'harvesting' programs which log onto a news server, strip out the email address from every message, remove duplicates and bad addresses, and then compile the lot into a fresh email mailing list. Bulk email software will then take this list and blast out a message to hundreds of thousands of people at high speed. Similarly, automatic newsgroup posting software lets webmasters bombard newsgroups with messages and pictures. Although now consigned to the great network in the sky, the anon.penet.fi anonymous remailer was inspired by the need to send newsgroup postings and email anonymously – and that in itself was largely fuelled by the desire to email smut. If you're worried about your IP address being identified when you look at adult sites, you can visit them via an anonymous forwarding service, such as **www.anonymizer.com**.

NEWS SPORT WHAT'S ON FUN KNOWLEDGE MONEY SHOPPING TALK INTERNET

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It's what you want to know

6. The huge amount of porn in the newsgroups has led many ISPs to restrict the number they carry. Other ISPs make it their chief selling point and have developed systems to make the smut as accessible as possible. The Picture View site (**www.pictureview.com**) automatically decodes all the binaries posted to all the non-paedophile newsgroups and dynamically generates Web pages complete with thumbnails. Visitors can then view the pictures with a mouse click or even download every picture on a page in a convenient ZIP file.

7. As a by-product of porn, ratings systems for Web pages have been developed. The popular RSAC system (**www.rsac.org**) grades each page on the level of nudity, sex, violence and swearing, and generates a meta tag for the webmaster to place at the top of the offending page in return for a voluntary cash donation. Concerned parents and other Internet users can then set levels of acceptable content in their browser.

8. Adult sites have revolutionised online advertising. Many sites offer their own banner networks, serving a dual function of increasing traffic and providing revenue for smaller sites. Unlike other advertising, where cash is earned every time a banner is shown, adult sites only pay when the banner is clicked on. But there's cash to be earned. Webpower, whose sites include Amateur Hardcore, The Hardcore Channel and FastPorn.com, paid out over $1 million dollars in its first year to third party sites that carried its advertising

Adult banner design is among the most intelligent in the industry. Animated GIFs are used almost without exception. One example of clever, or devious, design was the seminal 'You've got mail!' dialog box, which popped up over the top of a banner with an OK button to click on. Another had an animated download progress bar which gradually filled up, and when it was completed said 'Movie downloaded. Click here to play!'

9. Not everybody who uses online chat engages in cybersex. But an awful lot do. The unquenchable desire for dirty talk has led to huge advances in chat technology both within services such as AOL, the IRC networks, and Java-based Web chat. Chat is now widely used on many non-adult sites, but has its roots quite firmly in smut.

10. Unscrupulous Web companies have used and abused JavaScript to lock people into their sites. Many sites re-program the browser's Back button so that when you click to go back or try to leave a site, you're instead taken to another page within the same location, or to another of the company's sites. JavaScript is also used to pop up numerous windows when you open a page. Then, every time you try to close a window, more will automatically appear. This may sound like a complete pain. It is. But the scripts developed have since been used for more useful purpose on the rest of the Web and on intranet sites.

Vital statistics

Ready for some more statistics? Few adult Web sites actively tell you how much they're earning, but rest assured it's a lot of money. It's generally perceived that the top revenue-earning

sites on the Web are Sizzle (Starnet Canada), Smutland(Apollo Entertainment), ClubLove (IEG), PrivateGold (Cyber Entertainment Network), Amsterdam-live (Python Communications), SexRoulette (Xpics Publishing) and PureHardcore (Internet Supply). According to Tracy Kurz, marketing director at Starnet, all of the above sites make more than $500,000 per month and several of them top $1,000,000 in gross monthly revenues.

"There are no real accounts of exactly how much money is being generated," says Kurz, "but I would estimate that there are at least 20 or 30 pay sites which earn over $500,000 per month. There are several hundred more sites making more than $75,000 per month and thousands of sites (free and pay) making $1,000 plus per month... the revenues are phenomenal when people really start to consider all the niche markets and areas involved."

All this money presents a paradox: there's plenty to go round but the big publishers tend to be greedy. They all want a larger slice of the action, and competition is intense. Making money on the Net is largely a numbers game. The higher your traffic the more you will make and so adult site publishers have devised ingenious ways to get traffic to their sites. Many of these techniques can be applied elsewhere on the Web.

Adult sites have changed newsgroups forever. At first the sites posted samples to newsgroups to encourage people to visit. Now the most aggressive sites send out hundreds of messages ➢

The legal position

Ever since the Internet came along, people have been getting into trouble – and even been sacked – for looking at pornographic pictures. However, while Britain's laws on pornography are among the most restrictive in the western world, it is not an offence to go to an adult Web site and view or download the content – as long as it doesn't depict children under 16.

The principal control on pornography in the UK is the Obscene Publications Act 1959. The act makes it a criminal offence to publish any article whose effect would be to 'deprave or corrupt'. Unfortunately there's no legal definition of what this means. It is always left to the discretion of the jury. If you get 12 people fond of stripping off at S&M parties, you may find they have a more lenient view than a group of middle-aged *Daily Mail* readers from Tunbridge Wells.

When asked to clarify the situation, a Home Office spokesperson said: "No offence has been committed if sexually explicit images have been retained on a hard disk. However, it is an offence if a person publishes an obscene article, whether for gain or not, or to have an obscene article for publication for gain. Under the Obscene Publications Act, a person publishes an article if he distributes, circulates, sells, lets on hire, gives or lends it, or offers it, or electronically transmits it."

The situation is less clear, though, if you own an adult Web site which is hosted abroad. At first the Home Office spokesperson said that the site would then exclusively come under the jurisdiction of the country in which it was hosted. However, on reflection he later said: "You may be committing an offence in the UK even if your Web server was in a different country, as you could be regarded as publishing from the UK."

Until there's a test case, the law will remain vague and British webmasters looking for a slice of the huge online porn market will continue to run the unfair risks not faced by colleagues in the US and the rest of Europe.

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every day in an attempt to clog the groups with rubbish, and so diminish the easy availability of free pictures.

Aggressive sites have also bent the rules with search engines. Getting to the top of search engine listings is the best way to generate traffic. Had you visited the AltaVista search engine two years ago and searched for the word 'sex' you would have found about 70,000 references. Do it today and you'll find 10.5 million. Efficient sites therefore use meta tags and all the standard techniques to raise their profile, but some unscrupulous publishers are more devious. They use all sorts of unconnected keywords, so that when you search on, for example, 19th century cotton mills, you get offered links to Pete's Pervy Pleasure Palace.

Welcome to the House of Fun

People who join adult Web sites fall into three broad categories. In a rising scale of member loyalty, first are those who are new to the Web and who join the first site they come across, without realising the breadth of choice or the easy availability of free material. These tend to be the first to cancel as their knowledge of the Internet grows. The second type is those who have been around for a long time, have grown tired of poor quality sites filled with ad banners and don't mind paying for quality. The third type is perhaps a subset of the second: those people who have a particular interest which may be served reasonably well on the free sites, but who don't mind paying to guarantee the maximum exposure to whatever turns them on.

Clever adult sites offer free membership schemes. You can sign up for a day or a week, free of charge, but if you don't remember to cancel your membership before the end of the free period, your card will get hammered for the full monthly charge from that day on. Many of the top adult sites also have free feeder sites to drive traffic to the revenue earners.

A helping hand

Likewise, Tracy believes that a lot of non-adult webmasters can learn lessons from the porn sites. "The key to a successful site is quality traffic and a site worth bookmarking," she says. "Most mainstream (non-adult) sites look to commercial high-priced advertising as the primary way to drive traffic to their sites. While a big ad budget is always a bonus, there are several key factors to building a steady traffic base and seeing noticeable growth in a short period of time. The main factor in Net marketing is networking – the more people you have promoting your site and your product, the more money you're going to make. The goal should be to get as many sites feeding traffic to your site as possible, through as many methods.

"The best way to do this is to develop multi-level promotional plans so anyone can participate in promoting your site. This includes paid advertising on higher traffic sites and everything including click through programs, revenue shares and give-aways. You don't have to use ad dollars to get people to promote you – they might be just as easily convinced to promote you if you offer them free content, a chance to win a prize, or a great feature to add to their site. For example, our Sportsbook site offers webmasters a free 'sports ticker' that gives them up to the minute sports scores. The sports ticker has our logo and a link to our site, making it a free exchange of content for advertising."

Like it or not...

Ultimately, everybody on the Internet will feel the benefit of porn, whether you're creating an online business and benefiting from developments in e-commerce, or you're simply a Web site visitor in which case you gain from fast, high-bandwidth networks. However, if you are morally opposed to smut or its derivatives in any form, you're in big trouble on the Internet. Like it or not, the influence of porn is out there. And if you want nothing to do with anything it touches, it's time to bin your modem. im

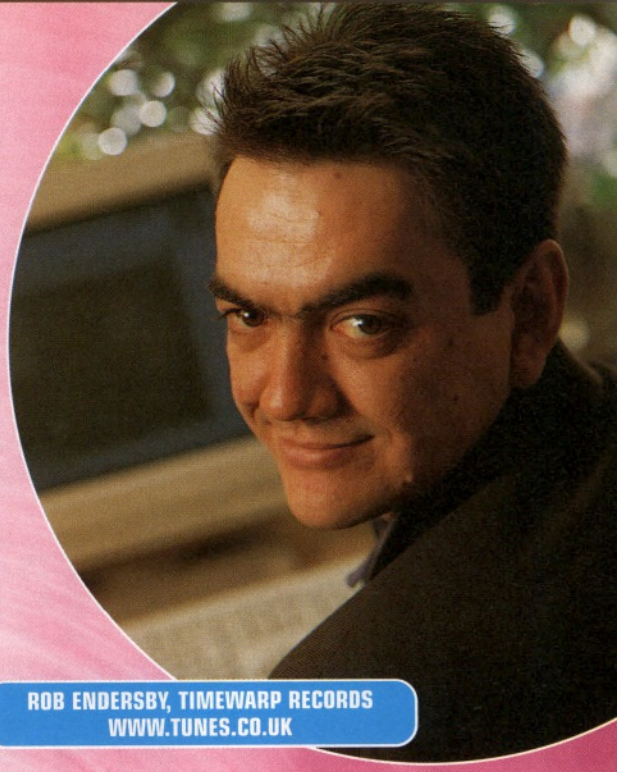
If you are morally opposed to porn and everything it touches, it's time to bin your modem.

Starnet is one company that uses these techniques and more, as Tracy Kurz explains: "Some of our more resourceful methods of promotion include our 'free traffic' generators. This includes a large network of free adult sites that we've set up and promote to drive traffic to our pay sites.

"Our content exchanges are hugely successful. We offer free sites access to free pics and MPEGs, hosted on our servers, in exchange for banner advertising. We have the content and the bandwidth and they have the traffic. We also offer a free 'Pic of the Day' to anyone that wants to post it with a return link to our site. The key to this type of promotion is taking care of the people that help you promote your sites.

"We offer great support to all of our advertisers and the people that link to us. All of our advertisers and content exchange promoters are given free access to our sites and are constantly being updated on new features, content and the like. If you can establish long-term relationships with these people, you know you've got a good support team to maintain your sites and help them grow."

A few words of ENCOURAGEMENT if you have ambitions on the Internet...



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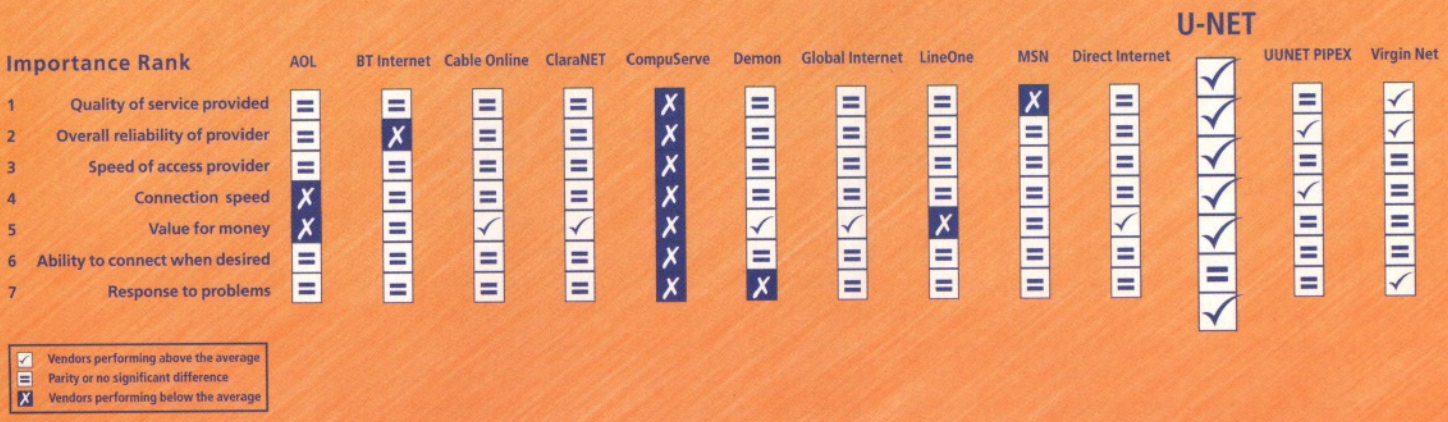

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Web design challenge

a site for a band

An up and coming band wants a Web site to help get the record company moguls waving their chequebooks. Paul Bennett went to Hartlepool to play Svengali

The Internet Magazine Web Site Challenge has already driven the building of sites for the charity Marie Curie, a small business, and Newent Community School in Gloucestershire. The premise is simple – we pick a client and challenge the UK Web design industry to pitch for the client's business. Three Web design agencies are shortlisted and asked to come up with a prototype site. The client then chooses which company's approach and site suits them best. This month's task is to take one unsigned band, Savoy, and show us what can be done to propel their sound onto the Web and, hopefully, into a record contract.

The Brief

The band wanted a site which would showcase their songs through downloadable audio clips. The site also had to reflect the band's image – you have to look right if you want those A&R people to pick you up. The site should also be an information resource, giving details of gigs and record releases.

The band would be the first to admit they didn't understand how much the Internet could help them. They'd browsed the Web looking at music sites and agreed that most of the sites seemed formulaic. The band's manager, Richard Myers, summed up the mood. "I don't want lots of text on the site and it's got to be quick," he said. What's more, the site had to be easy for the band to update.

Music on the Web is big business (see the article on page 58). Real Networks pioneered streaming audio (and now video) and Microsoft leapt aboard with NetShow. Nowadays anyone connecting to the Internet with a 28.8Kbps modem can expect to hear the sound quality of an AM radio. On a good day you might get FM stereo. Savoy realised that they needed to exploit the Net as part of their marketing plan...

The pitching process

The three successful Web design agencies all had experience of creating sites for the music industry. We also wanted to encourage designers outside of London –Sense Internet is based in Leeds, Tableau Design and Marketing is in Hertfordshire and RDNS is in Ashton-Under-Lyme. We gave each agency one of our mythical blank Internet Magazine cheques. Although the work was to be unpaid, we set the proviso that if Savoy became famous overnight, the chosen agency would be asked to design the official site.

The designers were introduced to the band members at The Studio in Hartlepool on 6 July. This is where Savoy rehearses and records its tracks. At the end of the initial meeting, which lasted about 90 minutes, each designer was given a pack which included press stills of the band, a potted history of band members and reviews from Melody Maker and Music Week.

The Web designers were given one month to research, design and build their sites. Tableau and Sense Internet came into our offices to present their designs and we also viewed the RDNS site from there. The judging panel included the band members, along with the Internet Magazine editorial team. The judges rated the sites on design, navigation, ease-of-use and relevance of content.

Your vote counts

Let us know what you think of the sites. Check out the sites on **www.internet-magazine.com/challenge**, follow the links to the sites and vote for your favourite. Remember your votes count. We'll publish the results in the November issue.

So you think you can do better ..?

You've seen what our three Web designers can do. If you think you could do a better job, we'd love to hear from you. We're hoping to choose another three Web design agencies eager to put their Web creations in front of the Internet Magazine readership. Fill in your details on our Web site first **www.internet-magazine.com/wdd**, then email me at **paulb@internet.emap.com**. And if you're struggling to put together a Web site and would like some professional help, email me and let me know.

RDNS

Savoy site hosted at
www.savoy.manc.co.uk

Time spent building site 143 man hours
Cost of site £2,574 (ex VAT)
Domain name, registration and twelve months site hosting would add £185 plus VAT to this figure.

Key reference sites

HOMEpage www.homepage.org.uk
Tumble Town Gymnastics www.tumbletown.com
GJ Games www.gjgames.com
Check out www.rdns.manc.co.uk/webdesign/results.html for the latest designs

Employees Two
Founded September 1997
Specialist skills Focus on designing affordable sites, typically costing around £390 (that includes design, domain name registration and a year's worth of Web hosting).

Server hosted by Telinco Internet (www.telinco.net)
Contact Robert Morris
Email rob@rdns.manc.co.uk
Phone (0845) 660 6600
Web site www.rdns.manc.co.uk/

Sense Internet

Savoy site hosted at
www.sensei.co.uk/savoy

Time spent building the site 39.5 man hours of design/11.25 man hours of account handling
Cost of site £2,791 (ex VAT). Plus £1,000 for domain name registration, hosting, indexing and linking.

Key reference sites

Rizla www.rizla.com
Yorkshire Electricity www.yeg.co.uk
The Musicians Union www.musiciansunion.org.uk
Yorkshire County Cricket www.yorkshireccc.org.uk
Harry Ramsdens www.harryramsdens.co.uk

Employees Eight full-time, three part-time
Founded August 1995
Specialist skills "We have a knack for understanding what the client wants, and what their visitors need."

Server hosted by Planet Online (www.theplanet.net)
Contact Aidan Cook
Email aidan@sensei.co.uk
Phone (0113) 293 7373
Web site www.sensei.co.uk

Tableau Design and Marketing

Savoy site hosted at
www.tableau.co.uk/savoy

Time spent building the site 160 man hours
Cost of site £10,000 (ex VAT)

Key reference sites

Easyjet www.easyjet.co.uk
Douwe Egberts www.douwe-egberts.co.uk
Cellcom www.cellcom.co.uk
Lee Valley Park www.leevalleypark.org

Employees 12
Founded 1993
Specialist skills "The agency boasts four drummers among its members. It's little wonder we were keen to get involved."

Server hosted by PSI Net (www.uk.psi.com)
Contact Russell Sheffield
Email enquiries@tableau.co.uk
Phone (01992) 462 660
Web site www.tableau.co.uk/

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Sense Internet

A grainy, raw approach

www.sensei.co.uk/savoy

Sense Internet was the only company to present a written summary of its work at the final meeting. It came to the presentation with a comprehensive launch plan. This involved forging a close relationship with the band's PR company to ensure cross-media consistency. Sense Internet had even put together several sample press releases.

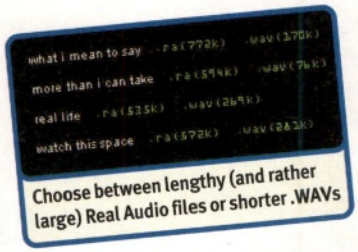
The design is based on a television theme, and jerky, grainy images are used to give the site a raw feel. Although the black backdrop was popular, and rated as "stylish" by the band, it did sometimes makes images difficult to distinguish. There are four areas to the site: the front end, the band, news and sounds. Each section is colour coded, although this sectionalisation wasn't clear enough for most of our test viewers.

The all-important sound clips come in two forms – WAV files and RealAudio. The WAV files are of reasonable quality, but they're short, and the band reckoned these brief snatches of their work didn't do them justice. But as support for .WAV files is built into Windows 95, it has become the *de facto* format for audio on PCs. The advantage for site visitors is that these audio files can be played by just about anyone with a sound card, regardless of browser.

For those with a fast Net connection, the four RealAudio tracks give you a better idea of how Savoy sound. Before you rush to listen, though, you'll need the absolute latest beta version of RealPlayer (we're now up to version 6) to play the audio. The Real Player system has two components: the server and the player. You can download the player free from the Real Networks site (**www.real.com**). However, once you get hold of the latest version you might still find the sounds rather slow to download. This is because Sense Internet doesn't have the server software for RealAudio. Why not? "Because it costs thousands of pounds and we're doing this site for free," jokes Aidan Cook. "As soon as the band gets their first record contract, it would be one of the first things we'd make available," he continues. At the moment though, this means there's no actual streaming going on. You're simply downloading a Real Audio file in one chunk as a single file, rather than in bits as a streaming file. You therefore have to be patient and wait for the whole thing to download.

The site is designed to give visitors a taste of Savoys' music. The site can also develop as the band progresses – that's why there is space down the left-hand side of the screen. Sense can simply add more menus as and when they're needed

The site was designed to work with versions 2.0 and above of the major browsers. It's less graphically impressive than the Tableau site and the navigation, especially the colour coding, can be confusing. However, plans are already afoot for the Savoy Web site v.1.1 to include a secure server for flogging merchandise.



Choose between lengthy (and rather large) Real Audio files or shorter .WAVs

Thumbs up

- ✔ Easy to update
- ✔ Caters for low-end browsers
- ✔ Design has room to grow

Thumbs down

- ✖ Why use the latest (beta) version of Real Player and force people into another download
- ✖ The WAV files seem redundant
- ✖ Overuse of navigation tools

TOUR NEWS
Jun 01 Bobs
Jun 06 London Camden Monarch
Jun 19 Ashton Under Lyne Witchwood
Jun 20 Bolton Hawthorns
Jun 27 Lincoln Grafton House
Jun 30 Hartlepool Brewer & Firkin
Jul 05 Sunderland Basement
Jul 05 Sunderland Basement
Aug 05 Internet Magazine

Updating the text is done easily using FTP. Sense Internet made all the updatable areas password protected. This means changes can be made remotely from any machine

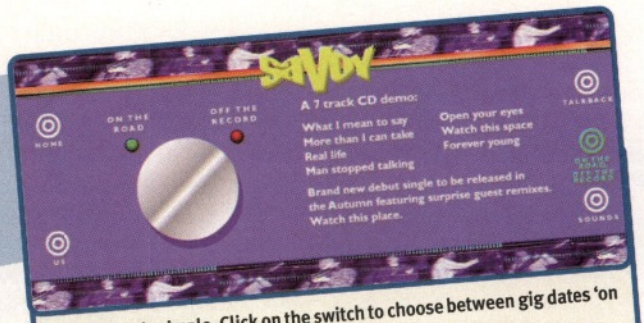
If you look closely you'll see some Macromedia Flash has sneaked into the Sounds section. This gives a much smoother juxtaposition of images. If you don't have Flash installed, an animated GIF alternative is downloaded automatically

Most of the movement on the site comes from simple animated GIFs (created using ULead GIF animator). The images are simple to download and have the appearance of a badly-tuned television set.

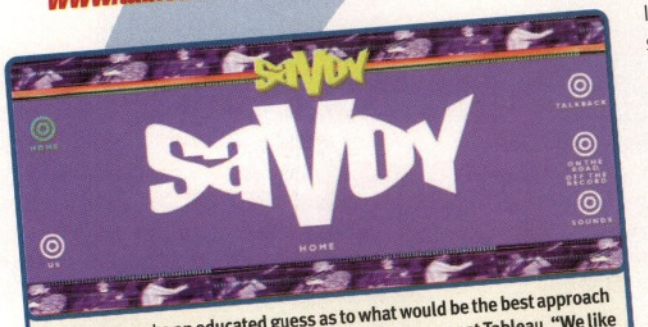
Tableau

Flashed up to the eyeballs

www.tableau.co.uk/savoy



Navigation is simple. Click on the switch to choose between gig dates 'on the road' or the band tracks 'on the record'



"We had to make an educated guess as to what would be the best approach for the band," says Rudy Tambala, new media manager at Tableau. "We like to see the site as a promo for record companies. The people seeing this site would be office-bound record publishers with multimedia PCs. However, it's still very much an information resource for existing fans. When band gets more successful, we'll make it much more fan-based."

Tableau unashamedly went for the fun angle and used Macromedia's Flash technology to add animation and sound to the site. One of the main advantages of Flash is its versatility and speed of download. "We wanted to appeal to as many people as possible," explained Russell Sheffield, MD of Tableau, "and with Flash there's compatibility across all platforms. You can use it no matter if you've got a 28.8Kbps dial-up connection or a leased line, and most people don't have to go look for a messy plug-in."

The first step for Tableau is to storyboard ideas. Then the creative guys come in and see whether the plans are feasible. They're joined by the HTML coders and from then on the creative team and the coders work hand-in-hand.

The site is design-led, with a cinematic theme which runs throughout the site. From the opening credits, it's like you're sitting in the front row of a cinema. All the action happens in a self-contained area framed by a montage of prints (compiled in Photoshop). The homepage looks like a scene from a Leicester Square film premiere. Lights bounce around the screen, highlighting the band's logo as lyrics pop onto the screen.

Tableau was keen to adopt what it calls its two-click philosophy. In theory, wherever you are on the site you're only two clicks away from every other area of the site. This might be a brilliant mantra to recite at pitch presentations, but it caused a few problems in practice. However, Tableau has been true to its word, navigating the site is a breeze. There are five navigation icons so you're unlikely to get lost.

Tableau used plenty of music samples, looped tracks and hi-hat cymbal roll-overs – which the band particularly liked. However, back at the *Internet Magazine* office we felt the constant background sound might become an irritant. It's certainly wise to make sure you've set the volume control on your speakers before you start.

One of the major concerns was about updating the site. There's no way for band members to update information remotely. They'd have to email the webmaster, who'd then have to make the changes manually. The band was worried that this would be a lengthy and costly process.

Tableau plans to produce a straight HTML version of the site for those with low-end browsers. Rudy Tambala, new media manager at Tableau, promised us it would look similar to the Flash version of the site. "There will be interactivity and there will be roll-overs, but we'll use Real Audio for the sound. Check out the HTML version of the site at **www.tableau.co.uk/savoy/plain**.

Thumbs up

- ✔ Attention-grabbing and fun
- ✔ Slick
- ✔ Never need to use your scroll bars, everything is self-contained

Thumbs down

- ✖ Difficult to update
- ✖ Expensive
- ✖ Audio clips can be irritating

One of the problems faced by all the designers was the limited content available. Tableau used this to its advantage by playing about with the images and asking for wacky photos and stories. The result is what Russell Sheffield calls "the first ever online promotional film for Savoy and possibly the first ever for an unsigned band". It's certainly the first to include drummer Graeme Boynton's cats

Even emailing the band members and the management has been turned into an interactive affair, thanks to the use of Flash

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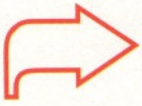

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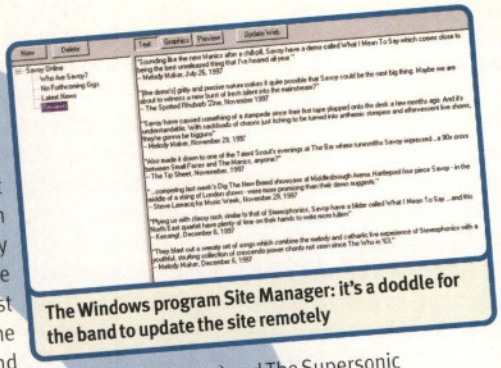
RDNS
Simple design and easy to update
www.savoy.manc.co.uk

RDNS was the youngest company in our challenge. Based in Ashton-under-Lyme, Lancashire, the company consists of Robert Morris and Michael Josephson. RDNS set out to build a simple site that worked well across all platforms.

RDNS told the band that design is only the first stage: "A site has to be backed up with promotion, along with regular maintenance and updating," explained director, Robert Morris. With a name like Savoy, there were obvious problems registering a domain name. Both **www.savoy.com** and **www.savoy .co.uk** had been registered. After a discussion with the band, it was agreed the best choice would be **www.savoyonline.com** or **www.savoy-online.co.uk**. To instill in users' minds that the site was an extension of the band, RDNS pointedly referred to the site as *Savoy Online*. It was the only designer to address this problem and give the site a standalone identity.

RDNS was keen to get email addresses for band members, the band manager and the PR company. All three design agencies include search engine submission as part of their domain registration service. RDNS has an automated system, developed in-house, for submitting to most of the major engines. "However, we always submit to Yahoo! manually to make sure the most appropriate category is selected," explained Morris. RDNS also suggested they get the band listed in specialist directory sites including, The Ultimate Band List (**www.ubl.com**), The Music Review and Music Search (both at **www.musreview.com**) and The Supersonic Guide (**www.head-space.com/iworld/supersonic**). Savoy were, however, worried that the compression of the sound files made their tracks sound warbled.



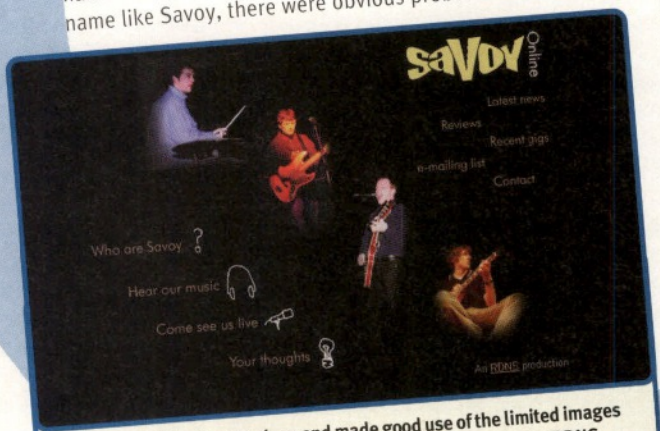
The Windows program Site Manager: it's a doddle for the band to update the site remotely

The prominent feedback area for fans and the mailing list pages were a plus on the marketing side – saving time and money on regular mailers. The fully automated mailing list included on the site would keep diehard fans in touch with Savoy's latest movements.

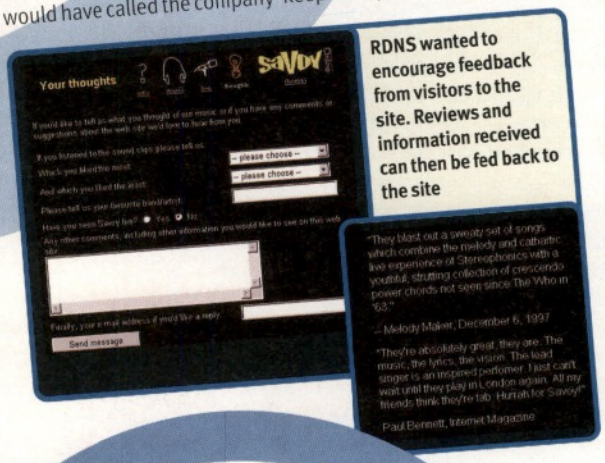
RDNS knew the site had to be easy to update, so it developed a little Windows program called Site Manager which lets the band access the text on the site, edit it and upload revisions. A grapics button can even supply GIF or JPEG images and attach them to a chosen paragraph. Clicking on the preview button shows you how the pages will look. Updates are FTP-ed to the RDNS server. This means the band could update the site in minutes.

RDNS used a CGI script to dynamically produce the gigs pages. This means once the date for a gig has passed, it gets pulled from the list and automatically moves to the recent gig list page instead.

The RDNS site was criticised for being too flat, but deserves praise for its easy updating. "We like to create a site that the customer can update after we've finished it," said Josephson. "We would have called the company 'keep it simple' if we could."



The design of the site was clean and made good use of the limited images available. By cutting the band photograph into individual shots, RDNS created a visually appealing homepage while keeping bandwidth-hungry JPEGs to a minimum


Your thoughts
SAVOY Online
Send message
"They blast out a sweaty set of songs which combine the melody and cathartic live experience of Stereophonics with a youthful, strutting collection of crescendo power chords not seen since The Who in '63."
– Melody Maker, December 6, 1997
"They're absolutely great, they are. The music, the lyrics, the vision. The lead singer is an inspired performer. I just can't wait until they play in London again. All my friends think they're fab. Hurrah for Savoy!"
Paul Bennett, Internet Magazine

RDNS wanted to encourage feedback from visitors to the site. Reviews and information received can then be fed back to the site

What I Mean To Say (38 second clip)
More Than I Can Take (31 second clip)
Real Life (40 second clip)
Man Stopped Talking (18 second clip)
Open Your Eyes (21 second clip)
Watch This Space (32 second clip)
Forever Young (55 second clip)

The impressive array of soundtracks on offer delighted the band

Thumbs up
- ✔ Program Manager made the site very easy to update
- ✔ Good compression techniques used on image files
- ✔ The site had a standalone identity

Thumbs down
- ✖ The repeated compression of music clips made the sound warbled
- ✖ Basic template design could be used for any band
- ✖ Rather flat HTML

The Verdict

The band liked the Sense Internet site. "I liked the tone. It was informative without being patronising," said Peter Hall, lead vocals, rhythm guitar. "It caught the mood of the band," added Mick Stuart, lead guitar, backing vocals. Neil Forcer, bass guitar, backing vocals dissented. He went for the Tableau site. "By far the most entertaining and informative site. And it showed off my belly." Peter Hall summed up the feeling of the rest of the band. "At first we were won over by the Tableau site, But on reflection we found it just didn't suit the band – it was too light-hearted." While the RDNS site is undoubtedly easy to update, it's the least visually exciting site. Tableau scores high for its excellent technology, but most small bands would find it prohibitively expensive. The Sense site looks good and is easy to update, but could lose visitors due to its complex navigation system.

Your vote counts

Remember to check out the sites yourself and tell us what you think www.internet-magazine.com/challenge

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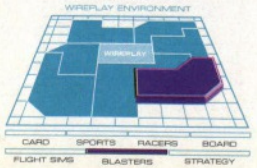

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REVOLVER
Andy Warhol

THE DAY THE MUSIC DIED?

MPEG 3 is the music lover's dream – an audio compression format which allows you to download high quality music from the Web; which, as Sean Gear reports, makes it a nightmare for record companies

"Home taping is killing music!" So ran the campaign in the 1970s which formed part of the music companies' drive to stamp out music piracy. It didn't kill music, as today's statistics readily testify. There are more than 11 billion CDs in circulation worldwide, and more bands are signing record deals than ever before. Whatever home taping did to music, you sure don't see Liam Gallagher getting the bus home.

But in the age of the Internet, there's another technology to give the recording giants nightmares. Piracy is back with a vengeance – and this time it's personal. The technology is called MPEG, and its latest manifestation – digital recordings in the MP3 format – represents a serious threat to the music industry.

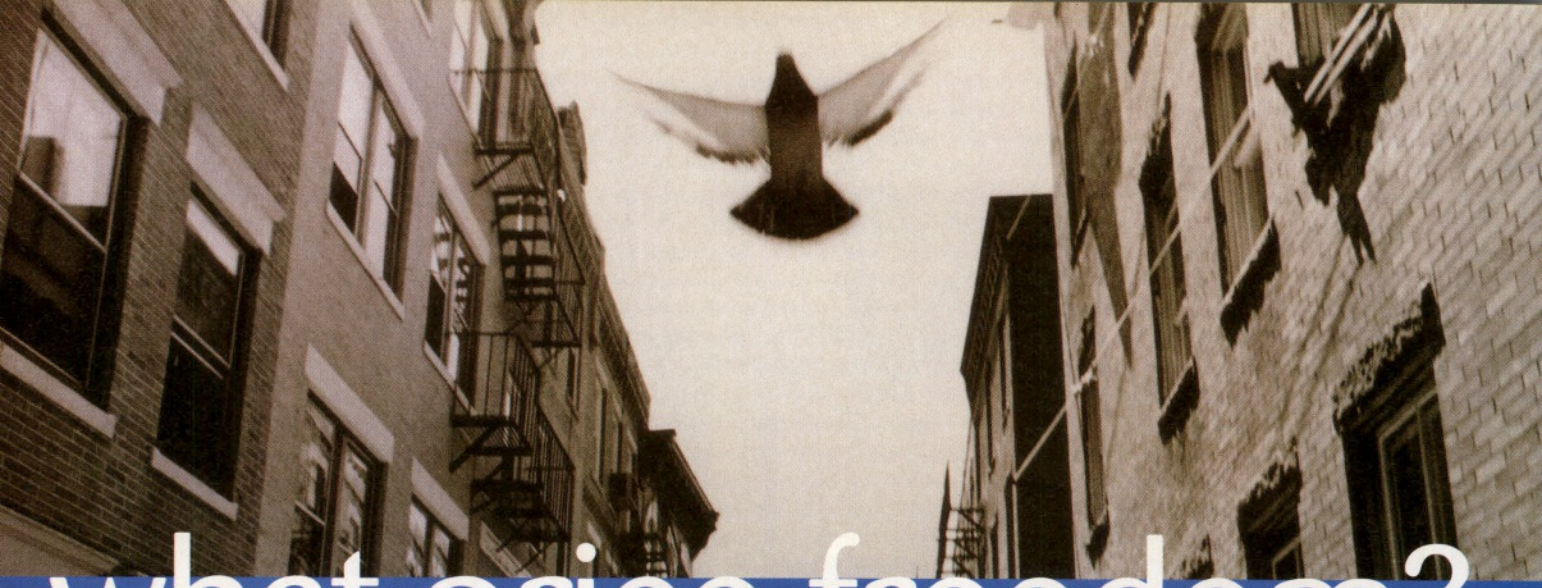
It allows the quick and faithful recording of music from CDs on a track-by-track basis, music which can then be uploaded to Web sites and newsgroups for all the world to download. A single CD can easily be copied to a file with one of the numerous MPEG3 encoding programs, and this file can then be copied hundreds or thousands of times. This has inspired thousands of people worldwide to hoist their digital Jolly Roger and share music. Want a copy of the latest Verve CD? Looking for that rare Captain Beefheart LP? Fancy snivelling to the *Titanic* soundtrack? Whatever you're after, it's out there. For free. People aren't selling this stuff; they're giving it away, just because they can.

MPEG technology has been around for a while; first developed in 1992 by the Motion Pictures Expert Group consortium, it has been in widespread use in CD-ROMs since the early 90s. Its first incarnation, MPEG1, was designed for hardware-assisted compression and decompression of video and audio, and it's been through several phases since, with both MPEG1 and MPEG2 audio still in widespread use. You no longer need dedicated hardware – modern Pentium-based PCs are more than equal to the task of encoding and decoding highly compressed audio and video – so an effective barrier to piracy has vanished, aided by the rise of a new distribution medium in the shape of the Internet.

MP3 files (the 3 stands for 'layer 3', the most complex of the three algorithms incorporated into MPEG) have become the medium of choice for compressing and distributing digital audio, thanks to their extremely high quality. However, MP3 may not be the last word in audio compression – new versions of MPEG are in the pipeline and other compression techniques may ultimately prove as useful, but it's a miraculous standard nonetheless. You can easily get compression ratios of up to 12:1 with MPEG and that means a four-minute CD track taking up 45Mb of disk space can be squeezed into as little as 4Mb of 128kbps, 44kHz MP3 with little discernible loss of quality. That translates to a typical download time of eight minutes across a 56K connection.

You need just two tools for transforming CD-based music into MP3 files; a CD ripper, which pulls individual tracks from the CD and converts it to an intermediate format such as WAV, and an MP3 encoder for turning the WAV file into the MP3 format. There are dozens of these tools available on the Net for little or no ➢

Illustration by Mat Hamilton



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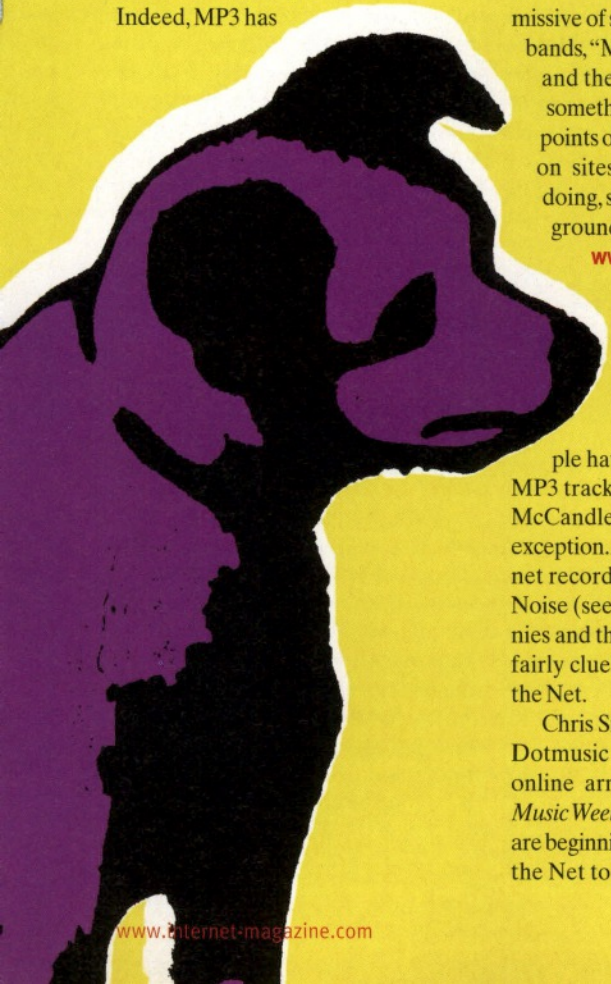
charge. Popular rippers include WinDAC, Audiograbber and CDCopy, all of which are effective and easy to use.

Encoders present a greater problem, as they vary widely in speed and quality. Writing an MP3 encoder involves the development of complex 'psychoacoustic models' that compress audio according to a model of the human ear. The best encoders, such as those from Xingtech (**www.xingtech.com**) built into the slick MusicMatch record/encode utility (**www.musicmatch.com**), limit the frequency ranges they encode according to those best heard by the ear.

If this sounds complicated, it isn't. A quick visit to a site such as **www.mp3.com** (see box on page 60) will equip you with the tools you need to start creating your own MP3s in a few minutes. Armed with a CD-ROM writer, it's a breeze to create a disk containing 100 of your favourite tracks from your CD collection and play it back on your computer using a player utility such as WinAmp or MacAmp (**www.winamp.com**). Providing you do this for your own use, you're within the confines of the law.

Indeed, MP3 has many other perfectly legal uses, because the format isn't owned or controlled by one company.



Increasingly, independent musicians are using MP3 to record and distribute their music via their own Web sites. "It's a brilliant distribution mechanism, a great way to get to a wider audience beyond the Home Counties and maybe attract interest from abroad," says David McCandless, a London-based musician whose debut EP *Smoother and Faster,* recorded on an old PC and available from his Web site at **www.wakeywakey.com**, won this year's *Q* magazine Starmaker competition for new talent. McCandless is dismissive of sites offering to market new bands, "Most band sites are rubbish, and they charge you a fortune for something you can do yourself." He points out that even with a presence on sites that know what they're doing, such as the Internet Underground Music Archive (IUMA at **www.iuma.com**), you'll get lost in the noise. "IUMA suffers from being too famous. There are thousands and thousands of bands up there," he says.

So far, more than 1,000 people have downloaded at least one MP3 track from his EP. Nonetheless, McCandless and his ilk are still the exception. Apart from a few new Internet record companies such as GoodNoise (see box above), music companies and their representatives are still fairly clueless about the workings of the Net.

Chris Sice, commercial manager at Dotmusic (**www.dotmusic.com**, the online arm of industry publication *Music Week*) says that some companies are beginning to understand how to use the Net to their advantage. "Companies like Virgin and Sony are much more open-minded now." Virgin in particular understands how it can get a lot of publicity from the Internet, he adds, citing the company's recent decision to put the Massive Attack album online in advance of the CD.

Where music is available on company sites, it tends to be in a streaming format such as RealAudio, which has yet to deliver CD-quality sound.

Francois Mazoudier, European marketing director at Real Networks, the company behind RealAudio, says: "We feel that MP3 doesn't offer as much as streaming media, espe- ➢

>A genuine Internet record company

Founded in 1997 by Bob Kohn and Gene Hoffman, both former senior executives at Pretty Good Privacy (developer of the famous PGP software), GoodNoise (**www.goodnoise.com**) is a dyed-in-the-wool Internet record company, concentrating on making deals with new and existing acts to promote and distribute their work.

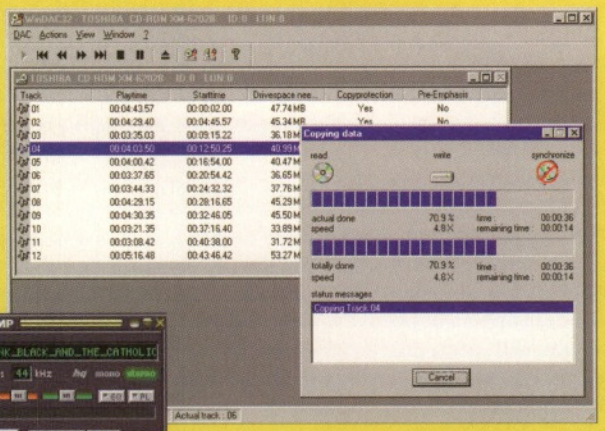
"We're out there signing bands just like any record company would," says Steve Grady, the company's vice-president of corporate communications. "Our long-term vision is that most music will eventually be distributed electronically, and it will be much quicker than most people think." GoodNoise recently signed Frank Black, the legendary Pixies frontman, in a deal to promote and sell his band's new LP online, a deal which Grady says benefits both artist and consumer. "In the traditional world, artists get such a small cut of the profits. Here, Frank Black gets 50 per cent. Our artists can connect direct with customers. Every time there's a new song available we can alert them and they can download it straight away."

GoodNoise is targeting students, most of whom now have high-bandwidth connections and are avid consumers of music. Many of these people are already active participants in the MP3 community, but Grady says this doesn't mean they're just pirates: "We look at them as customers. By being first to market and providing them with high-quality music, we're building a beachhead here." He's dismissive of attempts to regulate music on the Net via encryption: "It doesn't solve the piracy problem, it just makes the consumer experience a pain in the butt. And in the end, you still need an unencrypted file to listen to the music anyway."

> "Internet piracy needs big money thrown at it... or there may not be an industry in a few years."
> Simon Gallant, new media specialist, Mishcon de Reya

GoodNoise is one of the few companies to realise the potential of selling music over the Internet

Get hold of David McCandless's Smoother and Faster EP from his site

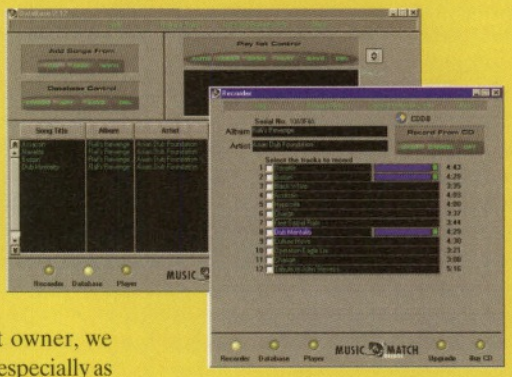


Right: WinDAC takes digital data direct from an audio CD and creates MPEG3 files
Below: WinAmp is one of the best MPEG3 players available
Below right: Music Match both records and plays back MPEG3 files

cially now that we can preload a lot more music into the buffer and that every 16 months we're stuffing twice as much audio into the same bandwidth." That claim looks pretty hollow, given the undeniable interest in MP3 and the predicted leaps in bandwidth in the next two years. Still, Real Networks is unimpressed, despite an announcement earlier this year that MP3 would be supported in the forthcoming G2 player, and the fact that Microsoft now supports MP3 in the Windows 98 Media Player and Netshow product.

MP3 it is, then, and pretty widespread it is too. Legal MP3 archives at sites such as **www.MP3.com**, featuring tracks from bands you've never heard of, are diverting, but not hugely useful. Unofficial – read illegal – MP3 archives are more interesting to most music lovers, although they can be difficult to find; searching for 'MP3' on AltaVista or HotBot churns up endless lists of links to more endless lists of links. True, there are some huge and accessible MP3 Web archives, such as Sprocket (**http://members.spree.com/sprocket/index.html**), but most of the interesting stuff lies on anonymous FTP sites and on UseNet (see box-out below).

Because so many illegal MP3 archives are hidden, the scale of music piracy on the Net is difficult to gauge. But a trawl via one of the MP3 search engines at Scour.Net (**www.scour.net**) or The MP3 Place (**www.themp3place.net**) reveals that it is indeed huge, especially as far as popular artists are concerned. If you're looking for music by the Verve, Madonna or even Metallica, you'll hit pay dirt. Look for the Pixies or Husker Dü and you'll probably draw a blank.



The music industry is, unsurprisingly, concerned about this. "We all agree that copyright must be protected. As a copyright owner, we think it's extremely unfair, especially as most bands don't make a lot of money compared with the few big names," says Neil Cartwright, webmaster at Sony Music in London. Yet unlike the software industry – no stranger to piracy itself – the record industry has not figured out how to approach the problem.

"It's a major problem for the record companies," says Simon Gallant, a new media specialist with London-based law firm Mishcon de Reya. "It needs big money thrown at it. They need to pool their resources and get a lot of bodies working on this, or they may not even have an industry in a few years' time."

Good advice or not, it's far from reality. Right now, the record companies have placed their trust in the hands of industry representatives such as the British Phonographic Institute (BPI) in the UK and the Recording Industry Association (RIAA) in the US. Here, the BPI, which represents 240 record companies, pursues Web sites containing copyright-infringing MP3s by alerting the relevant ISPs to their existence and requesting that pages or sites be taken down. "We're concentrating on MP3 at the moment. The current view is that the proliferation of MP3 will have the biggest impact on core business," says Jollyon Benn, operations executive at the BPI's anti-piracy division.

The BPI's approach works fine for the Web, where it takes down five or six sites each month, but it fails to deal with the thornier problem of newsgroups or FTP sites. And a potentially bigger problem is on its way in the shape of hardware devices capable of playing MP3 files without needing a computer.

Naiam's MPMan (**www.nordicdms.com/MPMan/MPMan.php3?SiteID=MP3**), is a Walkman lookalike with no moving parts but plenty of RAM and low power consumption, capable of storing about 15 MP3 files. This nifty device, along with several CD-ROM-based alternatives, is the subject of much excitement in the MP3 community and not a little hysteria from the music industry. Already, there's talk of encryption, watermarking and various other protection devices aimed at both hardware and software implementations of MP3.

In a world where even hardware protection on software is routinely broken, MP3 encryption is unlikely to deter the MP3 community for long. Like so much else on the Net, MP3 and its successors will prove tough to regulate.

Perhaps, with a little enlightenment and the example of GoodNoise to follow, record companies will see that regulation is inhibiting their own progress. In any case, the technology doesn't matter. It's the Net itself, and the communities it supports, that count.

David McCandless thinks that, in time, record companies will understand this. "This isn't the end of the story. Eventually the record industry will learn, and rise to control." Until then, piracy rules the airwaves. im

>Where to go from here

The best place to gather information about MP3 is at the truly humungous **www.mp3.com**, a vast resource that includes hundreds of articles and debates on MP3 technology, legal issues, hardware solutions and musicians. It also includes a huge archive of free, legal MP3 tracks from dozens of largely unknown bands, the best collection of CD rippers, encoders, players, samples and CD-based utility collections on the Net, lots of how-tos and dozens of links to other sources of information. It's also worth visiting WinAmp at **www.winamp.com**.

Once you're tooled up, you'll need some music. Most of the other big MP3 sites, such as **mp3.box** at **http://mp3.box.sk** and The MP3 Place (**www.themp3place.net**), host big archives similar to that found at MP3.com.

If you can't find what you're looking for here, head for Usenet, in particular **alt.binaries.sounds.mp3** and its relatives such as **alt.binaries.sounds.mp3.90s** (or 60s,70s or 80s), where you can post a request for a particular track or music by a particular artist. It won't be long before some helpful soul uploads the stuff you're after, especially if you show willingness to upload stuff yourself. Bear in mind that uploading or downloading copyrighted material anywhere is illegal; the chances of you being caught are slim, but you have been warned.

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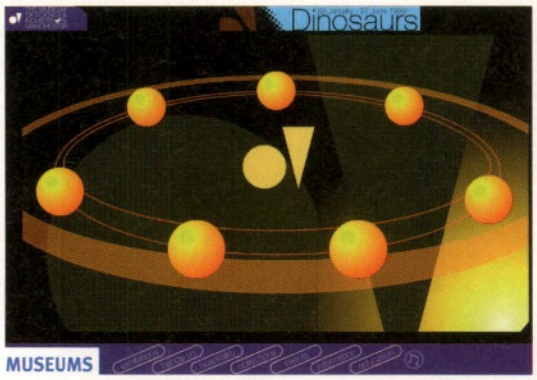

MUSEUMS

The Flash science museum

The Museum Of Science and Industry in Manchester has gone all glossy. Its state of the art site boasts Flash 3, together with Shockwave games, streaming video and lashings of VRML. A top site from SubNet, the designers behind Club 18-30 online.
www.msim.org.uk

The travel industry may be winding down after the summer, but not so the Web world. We start with a US site extolling the virtues of travel in Britain. On closer inspection, this turns out to be little more than a set of topical links. It's a fair stab, but lacks real content. The Tourist Authority's Visit Britain (**www.visitbritain.com**) is still streets ahead.
www.travelbritain.com

Next up is the latest marketing initiative from the Foreign Office. The aim of the site is to promote Cool Britannia to the world, and Shockwave Flash, frames and JavaScript have all been invited to the party. But despite this, and some hefty backing from Cable and Wireless (**www.cwc.com**), Rover (**www.rovergroup.com**) and Eagle Star (**www.eaglestar.co.uk**), the content is dated and dry. The homepage link to Eagle Star didn't even work. Whoops! Planet Britain is also available free to schools on CD-ROM.
www.planet-britain.org

But bang up to date, and with equal measures of style and content, is Black Britain Online. The jobs and classified sections are a bit sparse, but the site's spicy, topical and well researched.
www.blackbritain.co.uk

The World Travel Guide might not be as popular as the Rough Guides, but it still packs a punch – 1.5 million viewers a month can't be wrong.
www.travel-guides.com

NetIndex magazines is the result of an 18-month research and development programme. The promise is to integrate sites for 120 UK towns and cities. Sounds good, but many were still being redesigned when we visited despite promises of an early August launch. One worth returning to.
www.netindex.net

Ideally, local content should be similar to that for the small but perfectly formed Devon resort of Salcombe.
www.salcombe-online.co.uk

Or even the community site at Hythe in Kent.
www.hythe.co.uk

Silicon Fen inches closer to being Britain's most wired city with the launch of the Essential Guide to Cambridge. There's pub, restaurant, hotel and events listings, plus information for people with disabilities.
www.adhoc-guides.com

One year on from its launch, the RAC site has had a respray. The site now lets you plan your journey, get live traffic news from an online information service, and find a UK hotel.
www.rac.co.uk

If you fancy a drive to Brontë Country, check out this content-rich site before getting in the car.
www.bronte country.co.uk

If you're travelling even further North, Nessie is alive and well, last spotted at
www.nessie.co.uk

You'll find more monsters at the official site of the Scottish Claymores, Scotland's professional American Football team. There's news, stats, player profiles and a chance to get onto the mailing list.
www.claymores.co.uk

Premier League clubs hog most of the TV coverage and spend six-figure fees on their Web sites, but Bristol City is competing against the very best in the online world. Its site is packed with information and includes a shop offering secure credit card transactions.
www.bcfc.co.uk

You don't need a huge cash injection to create your own site – a fact proved by the unofficial online fanzine for Lincoln City.
www.redimps.com

Express Sport Live is all kitted out for the footie season, promising reports on every league game, a chat room for every professional match and a 'What if' calculator to predict league tables. There's also a news ticker displaying live scores during matches. "If Web technology allows it, we'll be using it," they promise.
www.express-sport.com

HOTELS

Look before you book the Athenaeum

The Athenaeum hotel has launched a detailed Virtual Reality tour on its Web site. The files are a snip at 40Kb, so they look good and are quick to download. There are six 360° Java tours which include the bedrooms and some lovely views over Green Park.
www.athenaeumhotel.com

eyor

phone calls are expensive. So save time and this month's essential sites

FINANCE

Talking insurance with a toddler

Standard Life is using its talking toddler ad campaign as its Internet spokesbaby. Visitors to the revamped site can talk to James and find out when he's next on television. Links are in the shape of building blocks, and streamed video versions of the adverts will be available when James gets his parents' permission.
www.standardlife.co.uk

Saxdesign might not be the first name you'd associate with men's ties, but this site is silky smooth. Which is more than you'd be if you're caught wearing anything from its novelty range.
www.saxdesign.com

Sense Internet was much more on the ball when it registered a domain name for Guys and St Thomas's hospital trust in London.
www.hospital.org.uk

Revised and refreshed, the new Tango Web site explodes onto your screen. Here, an escaped gene created in the Tango labs is set loose in the UK. Mr Tango is called upon to save the day and duly does so amid a vaste array of graphics. It's fun and fruity and you can download the 'genes' onto your PC.
www.tango.co.uk

Into all things cool and kinky? Granada Plus wants you. Talk about *The Avengers* and look forward to an interview with Linda Thorson, aka Tara King.
www.gsb.co.uk/avengers

The Avengers movie opened this August to a tepid reception. Its site is all Macromedia Flashy, with standalone sites for Mrs Peel, John Steed and the diabolical Sir August De Wynter. And there's an option to take a country jaunt in Emma Peel's Jag.
www.the-avengers.com

Builders merchants Graham Group's new site stocks over 1,000 pages. Foundations are being laid for an online ordering system. It should be in place by the end of the year.
www.graham-group.co.uk

Fresh from the revolving doors of the BBC Online department, it's nice to see a site dedicated to trivia about Auntie. It's even nicer not to see Noel Edmunds.
www.bbc.co.uk

Or educate your minds with EdView Smart Zone – a database of over 25,000 teacher-approved Web sites including what's termed as the 'best of the best' for children of all ages.
www.edview.com

Lose weight without leaving the house, with the Interactive Slimming Club. Buy a weight loss pack online and you can keep in touch via email with like-minded individuals who'll support you as you go suffer chocolate withdrawal symptoms.
www.slimtone.co.uk

From a small studio in Bristol to Oscar winners, Wallace and Gromit are Hollywood legends. Their creator, Aardman Animation, has launched a Web site from West Wallaby Street. It offers the usual fare – official T-shirts, watches, CD-ROMs and other novelty items. Cashing in? You better believe it.
www.aardman.com

Why do they *do* that?

The top homepages of this month include Matthew 'I've got 10 free megabytes and I'm going to use it' Woolner.
http://vzone.virgin.net/matthew.woolner/home.html

Dedicated to couch potatoes, the Potato surf club offers a whole new collection of WAV files including a WAV of the week. It's a great opportunity to build up your collection of annoying sounds to play when you've got post, closed a file...
www.webcom.com/neoneon

And while you're on the hunt for sounds, stop off at this old favourite. Belch.com has blossomed into a fantastic resource for the gaseous. The site includes a host of celebrity belchers including Tom Hanks, Denzel Washington and Whitney Houston sounding like she just drank a can of cola a bit too quickly.
www.belch.com

Midlands Electricity sells gas now, but its site is nothing to write home about. The gas tariff calculator is useful, but most content is straight out of the corporate brochure.
www.meb.co.uk

If nobody's run up to you to give you flowers lately, it's probably because they're being delivered over the Net. The latest online florist is Flowers by Design. It targets the high end of the market, and offers individually designed arrangements delivered direct by courier.
www.flowersbydesign.co.uk

Interactive Collector, the resource for buying and selling collectibles, has launched its exhibition centre as a virtual gallery. Visitors to the site can check out some top international commercial galleries. Paving the way is an exclusive selection of David Bailey prints never previously displayed together.
www.icollector.com

Gadget fans will be delighted that Maglites pocket knives – the ones that boast virtually every tool known to man – are now available online. The site has around 300 pages of bloke-related products.
www.heinnie.com

Beazley, an insurance underwriting syndicate has enlivened a rather dry site with a Webcam showing live pictures of queues in the Lloyd's building.
www.beazley.com

Finally, the Help the Aged Web site has been launched. It's got a nice splash message before you get to the homepage proper but then the site is text heavy and formulaic. At least it's pretty sprightly.
www.helptheaged.org.uk

take a closer look at Netkonect...

At Netkonect we are known as the 'Backbone Provider'. We supply the connection for other service providers.

You too can connect with Netkonect.

Like a Backbone, Netkonect is flexible. In fact, we can tailor an Internet package specifically to your needs. Whether you need a dial up account or a direct connection for your entire business, we can provide you with a flexible solution.

For a fully supported Internet service, connect to the Backbone with Netkonect.

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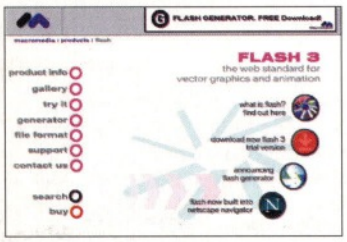
SPOTLIGHT ON...

The best Flash 3 sites

Web site designers have welcomed Flash 3 with open arms. It's bringing faster-loading, higher-quality, more complex graphics and animation to all of us. Garret Keogh tracks down the best uses of this powerful technology

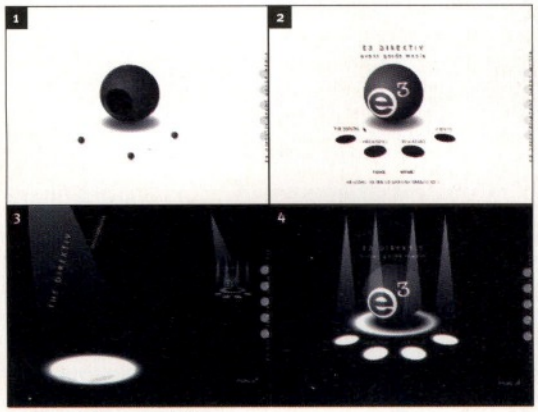
As far as designers are concerned, Macromedia can do no wrong. While other technologies, such as Java, have failed to live up to their hype, and new contenders such as ActiveX only attract traditional developers, Macromedia's Shockwave and Flash technologies have flourished



(**www.macromedia.com/software/flash**). Indeed, we're all so enamoured with the company's Shockwave technology that in 1997 more than 40 million Shockwave players (Flash and Direct, or combined) were downloaded from the company's site. That's an impressive installed user base by any reckoning.

Flash has proved popular because it lets developers build complex animations easily. And there are enough players and plug-ins out there to make sure the files can be viewed pretty easily.

In its simplest form Flash is a graphics editor and animation tool. Flash also creates amazingly compact files that load quickly. In the immortal words of *Spinal Tap*, Flash 3 is 'one louder' than its predecessor. Improved animation tools, a better interface and better bandwidth management make Flash 3 a vast improvement over previous incarnations and a powerful tool for any designer.



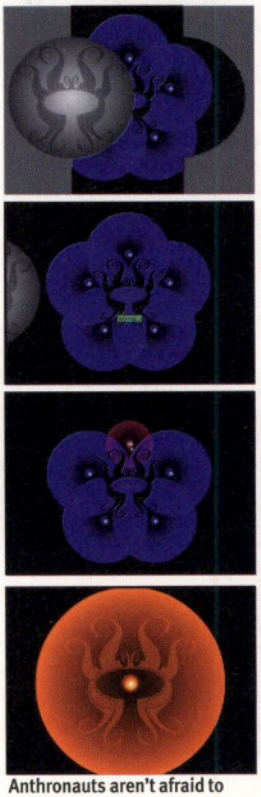
E3 direktiv

Now this is impressive. This design company has taken a simple design metaphor and turned it into this amazing site. Cool and jazzy music plays, while a series of spheres allow you to navigate through the company's work. There's enough good work here to inspire you. Java is used heavily but it's Flash that's doing all the impressive stuff.
www.e3direktiv.com

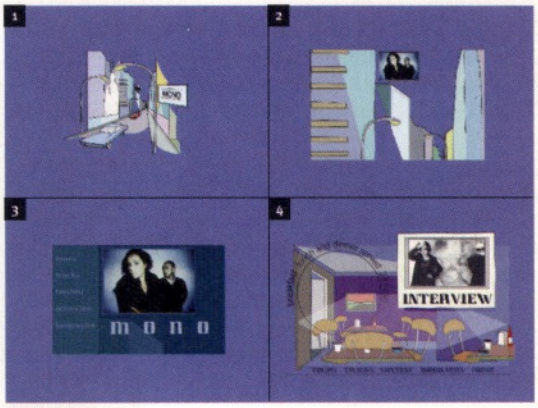
The quality of the Flash work out there is impressive. From tiny rollover buttons and rotating graphics to full streaming movies with high-quality audio, Flash 3 is highly visible on the Web and makes it a more exciting, dynamic environment to work in. Here are some of the best examples...

Anthronauts Web Agency

A US-based agency specialising in Flash design. This is a brash, brave site with no qualms about showing off its designer's skill. It's all terribly impressive with funky repetitive beats, stunning and stylish graphics and it all acts as a great ad for both the designers and Flash itself. Over an average modem Net connection some of the graphics can be slow, but it's impressive considering what's achieved. You'll have to be frightfully good to produce anything like this, but it's something to aim for.
www.anthronauts.com



Anthronauts aren't afraid to show off their Flash skills

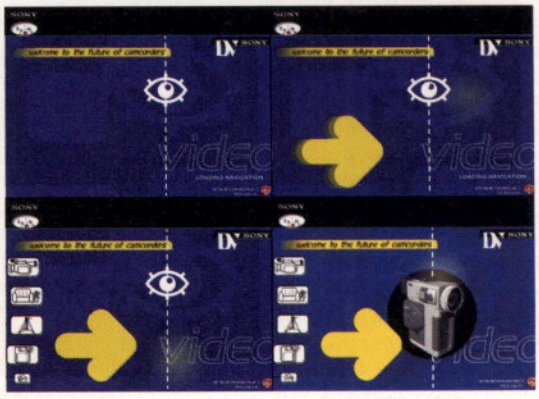


Mono

Not so well-known duo Mono have come out of Nellee Hooper's team of production people who have worked with acts such as Massive Attack and Bjork. This colourful site hides a rather simple collection of links and tracks. The Flash simulates a drive down a city street, but the refreshing illustrations and clear graphics make a nice change from the usual Flash fodder. Worth a peek.
www.polygram-us.com/mono

Sony Camcorders Europe

Rather slow on a dial-up modem, this site is still a feast of moving graphics and sound used to demonstrate the company's camcorder products. A brief intro pretends to scan your retina for access and then it's straight into a tour of the products with full Flash



A frenzy of camcorder graphics awaits you at Sony's site

navigation. It's all a bit much, with rotating cameras, logos, text and icons whizzing round. But there's plenty to click on, and it's a great way to get a good look at the camcorders. Idgruppe (**www.idgruppe.com**), the company responsible for the Swatch site, is also behind this one.
www.sony-europe.com /camcorder

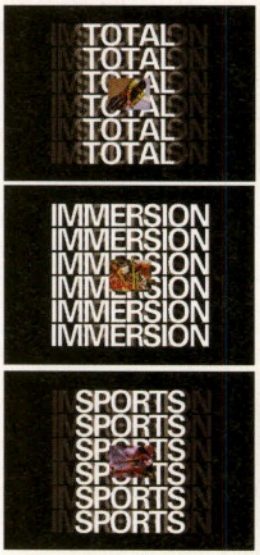
Swatch Art

Here you can see photographs, animation, sound and text all working together in an effective ad for the Swatch Irony Scuba product range. 3D wire-frame models of the watch overlap with images of the desert and company logos. The clean, crisp graphics work well and the site is fast to load. Very sleek, very impressive online entertainment. Swatch has been one of the most successful advocates of online branding and this constantly changing site is a great achievement.
www.swatch-art.com

The Swatch site is so engaging, you almost forget it's an ad

Quokka

The company which designed the Olympic site (see below) is also responsible for a range of sporting sites and has developed a technology called Total Immersion. By using technologies such as Flash and other streaming media, the company mixes visual and statistical information in an innovative way. The company also did much of the work on the Whitbread Round The World site (**www.whitbread.org**).
www.quokka.com



Quokka's Total Immersion integrates several technologies

Shift Online

A great example of how Flash can be used with simple text to create clear navigational devices and effective headlines. An online e-zine from a media company that also produces a print magazine, Shift Online uses Flash to link features, images and text in a way that both invites the user to browse and to read the articles. Presenting text features online is never easy and here Flash delivers the goods. I loved it.
www.shift.com

Text has never been so clear

Nostradamus

For a sixteenth century prophet, this is a cutting edge Web site. Statements such as 'From the sky will come a great king of terror', can be interpreted to mean all sorts of things. This site uses Flash to allow you to access the bearded one's works. The Flash and main text is well integrated and there's enough stuff to keep you coming back for more. Clever stuff.
www.amae.com/

Coming soon: Flash Generator

A forthcoming technology from Macromedia, currently in beta, Flash Generator (**www.macromedia.com/software /generator**) allows database information to be incorporated into Flash animations. This means news and other live feeds can be integrated into Flash templates and the information manipulated, animated and presented in many ways. This technology will revolutionise the presentation of live data over the Net and should develop the medium radically. There are five amazing examples (see above) at the Macromedia site. Pop over to **www.macromedia.com/software /generator/demos /contents.html** and prepare to have your socks blown off. While you're there, download the free beta.

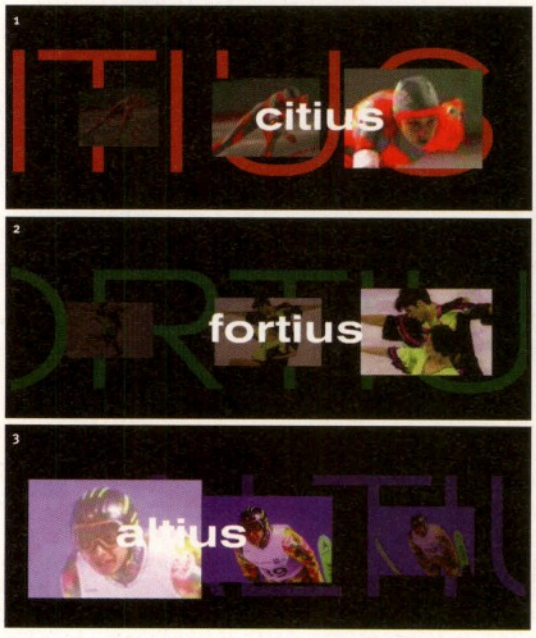
An online crystal ball

Macromedia

The company showcases its own products well and Flash is used throughout the site. Some of these examples are available here while the company's **www.shockrave.com** site is still the best place to find great examples of Shockwave. Navigation is clear and simple, design metaphors are consistent and the site has a fresh feel.
www.macromedia.com

Garret Keogh is a senior producer at CompuServe UK. Email him at gkeogh @csi.compuserve.com

It doesn't get much better



The International Olympic Committee

Dealing with future events and past Olympic tournaments, this dynamic site covers many topics and uses Flash to create a well-designed and beautifully executed site. Flash has also been used to create a streaming movie highlighting some of the more unusual and heroic sportsmen and women who have won Olympic medals over the years. Simple images and text are faded in and out and the overall effect is of a classy TV-style documentary.
www.olympic.org

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SITE OF THE MONTH October 98 internet magazine

SITE OF THE MONTH

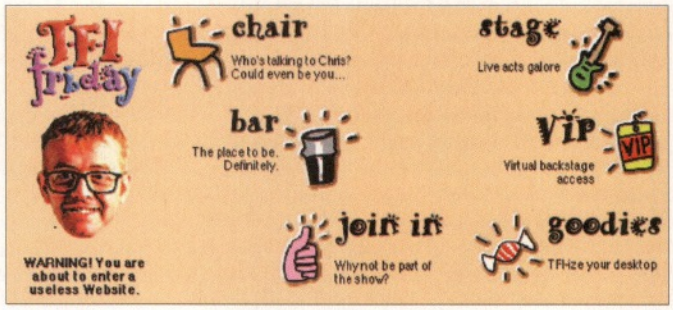
Bigmouth strikes again

Chris Evans' steady campaign to take over any and all media reaches the Web with the launch of the first three Ginger Media Group sites. David Atkinson battles his way through the hordes of eager advertisers anddrunken youths to see just what the TFI has to offer

So here's the challenge. Take the biggest ego in the media, a cool, youth-friendly TV programme that advertisers are desperate to get in on, and an upstart new media owner with an 'if they like they buy it' ethos. Liberally stir in a healthy dose of online technology and shake it around like the front row at a Symposium gig. What have you got? The online debut of the Ginger Media Group and the latest addition to the TV meets Web saga all built around a flagship brand.

The first three sites to launch from Ginger will be hitting your screens this month and consists of a corporate site (**www.ginger.com**), a revamp of the long-established Virgin Radio site (**www.virginradio.co.uk**) and, most importantly, the site which will take TV's *TFI Friday* – back on screen in early September – and let it run loose across the Net at **www.tfifriday.com**.

Of the three, the *TFI* site is the biggest launch, dipping a toe in the waters of Web and TV convergence with a view to Ginger creating sites for all its future TV productions. Currently in production is a series called *Models* narrated by David Bailey, which delves into the skinny world of supermodels. *TFI*'s own Boy Wonder, Will McDonald, is developing pilot programmes with the BBC, of which *Carry On Campus* – a downmarket *University Challenge* – is the front runner. All have spin-off site potential.



Here's where the fun starts: the TFI Friday homepage, already oozing spin-off potential

"Given Ginger's range of properties across radio, TV and Web, there's a huge issue of convergence between the media," explains John Ousby, director of online projects for the Ginger Media Group. "This is a commercial move for us, a means to explore online opportunities for the group."

Ugly site?

The relationship with design house 4i (**www.four-i.co.uk**) was forged during work on the original Virgin Radio site, and Ousby deemed them the best team to take on the whole Ginger account, based on their "innate ability to translate existing brands into new media brands".

In addition to 4i, Mike Slocombe, loose cannon of the Web design world and the man behind Urban75, was brought on board as a design consultant to the project.

"They asked me to come up with a look and feel to reflect the show's quirky nature and make it appeal to as broad a spectrum as possible," he explains. "The problem is that the show is written just a few days before going on air, so I had to create templates that would allow them to upload content as soon as the show goes out."

Another major consideration was to reflect the expected convergence of media – the site is designed specifically with a Web TV audience in mind. The pages are kept narrow, with minimum scroll left to right and no white backgrounds to beat the lack of pixel power.

Show us your site, then

Structure-wise, the site is based loosely around the set of the programme, with areas like the bar, Chris's drum kit and the interview desk all recreated in a fuzzy visuals stylee. Arriving at the sandy-tinted homepage, you find the mug of the ginger gringo himself and a set of navigation icons leading through to various strands. Sections include such firm family favourites as Ugly Bloke, Freak or Unique and Show us Your Face Then. As the site evolves and viewers email in their own pictures and submissions, these strands also have potential to spin off and become sections in their own right. Be warned – the URL **www.ugly bloke.com** is all registered and ready to go.

Most of all, though, the site had to capture the show's sense of irreverence and fun. There are already numerous *TFI* fan sites around (try checking out **http://welcome.to/tfifriday** for details) which are doing a good job, so the official site had to offer something completely different. "The fan sites are tongue-in-cheek, and create a great sense of community – which are qualities we admire," explains Deborah Loth who is overseeing the project on behalf of 4i.

"We also wanted the site to be wacky, to be flexible enough to incorporate new strands as features evolve with the show, and to keep download sizes down to around 300K," she adds. "We had a series of brainstorming sessions between John, Mike and myself, and from those, the spirit of the site evolved naturally."

The lessons learnt by other Web and TV convergence pioneers

Internet Magazine asked other media folk on the Web what they thought of Ginger...

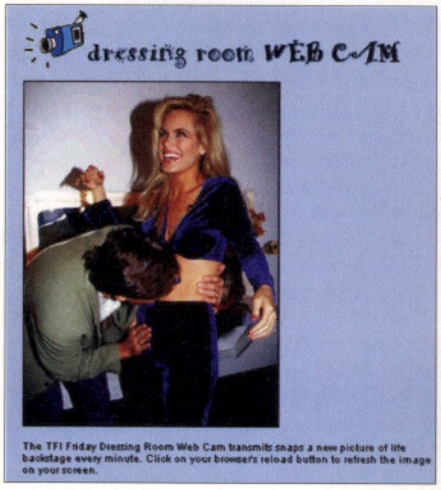
Anna Russell, editorial director, Silicon News
www.siliconnews.com
"We're about being a medium to transmit television on demand, but they're taking TV designed for terrestrial broadcast. This doesn't translate well online, especially given the wacky camera angles and fast cutting they use.

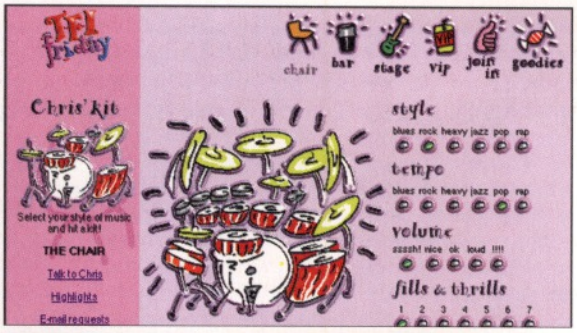
"If they're just taking content from the TV and putting it on the Web, then it won't work. They need to focus on interactivity and solicit information and comments from viewers. That way they can use the site to feed into the TV programme. "Few people have taken TV to the Web and targeted a consumer audience. The time is right for someone to have a go at that and I somehow I just can't imagine Ginger doing it badly."

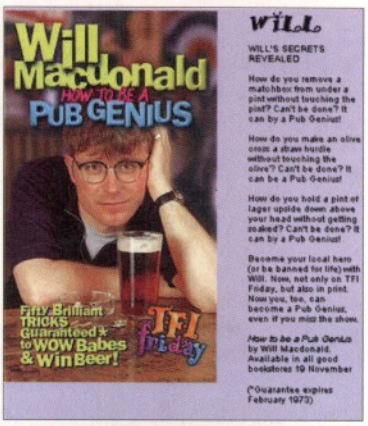
Colin Donald, MD, Futurescape
www.futurescape.co.uk
"Ginger are well placed, as they have a strong media property with a wide appeal. If they can cater for both high and low end connectivity then I think they could make a good job of it.

"The obvious problem with converging media is how you actually do it. If you're taking TV content, that means either having huge downloads or using streaming. It's bandwidth, bandwidth, bandwidth – and quality always suffers.

"Still, I think Ginger are more than suited to the job, given their media properties. I think they've got a good chance of doing something interesting. A lot of TV Web sites are simply support information sites, but with the wealth of content available to Ginger makes for an interesting proposition. I'm certainly looking forward to seeing what they can do."


dressing room WEB CAM
The TFI Friday Dressing Room Web Cam transmits snaps a new picture of life backstage every minute. Click on your browser's reload button to refresh the image on your screen.




Will Macdonald
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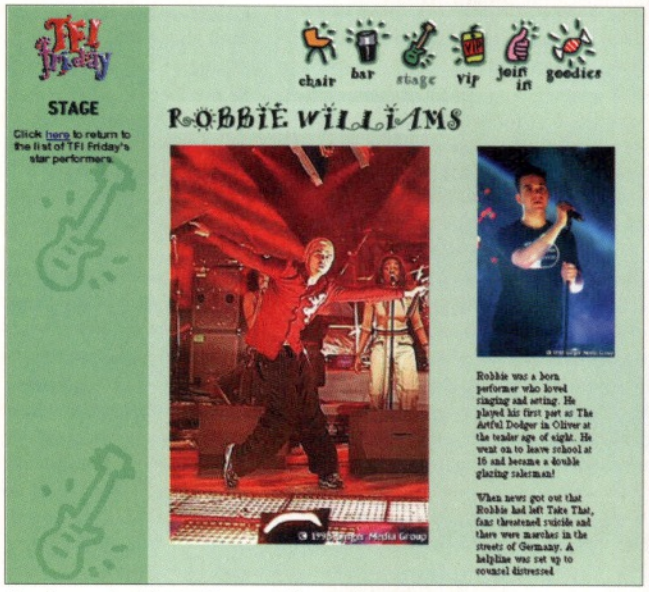
Become your local hero (or be banned for life) with Will. Now, not only on TFI Friday, but also in print. Now you, too, can become a Pub Genius, even if you miss the show.
How to be a Pub Genius by Will Macdonald. Available in all good bookstores 19 November
(*Guarantee expires February 1973)


TFI friday
chair
bar
stage
vip
join in
goodies
STAGE
Click here to return to the list of TFI Friday's star performers.
ROBBIE WILLIAMS
Robbie was a born performer who loved singing and acting. He played his first part as The Artful Dodger in Oliver at the tender age of eight. He went on to leave school at 16 and became a double glazing salesman!
When news got out that Robbie had left Take That, fans threatened suicide and there were marches in the streets of Germany. A helpline was set up to counsel distressed

If you've watched the TV show, you'll know what to expect from the site – models, blokes, lager and the lovely Robbie Williams

It's your legal letters

A final stumbling block lies (ironically) in the vast archive of material available to use on the site. With three series in the can, that's 100 – count 'em – programmes worth of interviews and band performances, you'd think the design team would be knee-deep in edit suite material. But the ugly issue of performing rights and Net copyright has reared its head once again. Even media moguls, it seems, are prone to an attack of the copyright monster.

"We would like to post the entire archive of celebrity interviews and band performances online, but there's a huge copyright issue," explains Ousby. "We are currently in an ongoing discussion about music rights with record companies with a view to putting the bands' performances out in RealAudio and video formats. Meanwhile, we will be launching with content we've got clearance for."

The wheels of steel keep rolling

It's certainly an ambitious launch, with long-term potential to spin off a whole slew of sites under the Ginger umbrella. There's the chance, for example, to break into international markets and sell the brand abroad. And Beatnik's, audio advertising on the site is set to earn from the range of high profile clients scrambling to occupy its ad breaks.

But surely there are some furrowed brows at Ginger HQ? Other media owners haven't exactly had an easy ride taking their TV brands to the online environment. Step forward beeb.com.

But Loth is sanguine. "We're working with a rabble-rousing brand that suits the medium, prompts reaction and fosters community," she smiles. "With Ginger we have gone against the prevailing wisdom of media owners – namely hire a big staff and create an entirely new brand online."

"It's not that the other media owners have made mistakes, just that we're starting Ginger Online from scratch," she adds. "We just believe in taking our existing brand equity and making the goddam best of it." im

Apologies to...

Nick Gilbert and the team at the UK Internet news service NewsNow Publishing Ltd who we quoted in our September Site of the Month as having the URL www.newsnow.com, which belons to an unrelated US site. NewsNow is the UK's first news portal site and is nowreceiving 650,000 page impressions per month. Search over 17,000 headlines to find your favourite clients, technologies or Teletubby in the news.

www.newsnow.co.uk

Also in that article, we gave the impression that Hewlett Packard had sponsored the Desktop Strategies Channel sections of Silicon News. This was not the case. Hewlett Packard has not sponsored any section of Silicon News. We apologise for any inconvenience caused.

Site Of The Month

TFI Friday

as part of the launch of Ginger Media Online

Designers

4i Ltd in consultation with Mike Slocombe

Development time

Three months for TFI Friday, shortly followed by the Ginger.com corporate site and relaunch of the Virgin Radio site

Development costs

Ginger Online is a division of the Ginger Media Group, which is valued at £90 million

URL

TFI Friday
www.tfifriday.com
Virgin Radio
www.virginradio.co.uk
Ginger corporate site
www.ginger.com

SITE OF THE MONTH October 98 internet magazine

She blinded me with science

The site is designed for Web TV and Netscape 2 with a technology agnostic approach to avoid an obstructive feel. However the site does use one plug-in, a sound manipulation technology developed by 80s pop funster turned Web wizard, Thomas Dolby. And yes, before you ask, he was the man who put Magnus Pike in his pop video. His company Headspace (**www.headspace.com**) developed the Beatnik plug-in ,which works to make the most of available bandwidth to generate rich sounds from small MIDI files.

It's most effective on Chris's drum kit where, by scrolling your mouse across the sections and selecting sounds, you can create 16 channels of sheer cacophony – even worse then the day they let Robbie Williams loose on it.

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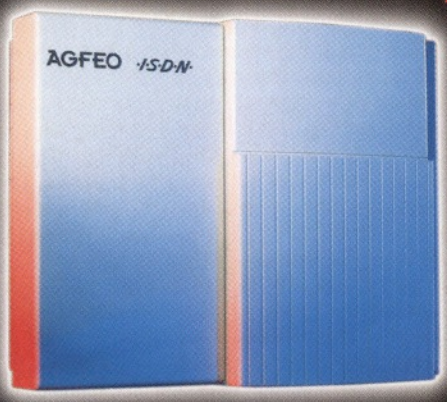

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BEHIND THE SCENES...

October's top sites

Experts tell us how this month's top sites were built. Get the lowdown on the products the webmasters use, the inside track on site budgets and tips on how to use the latest technologies

HP JetSpeed Network Racing

A great little racing game, and if you get caught playing it, you can claim it's in the name of professional development

It's weird. It's an online networked racing game from, er, Hewlett-Packard, purveyors of fine laser printers, PCs and other top-end techie hardware. But it's not just a game, it's educational too. Yeah, right.

But it is. The game is designed to teach you more about setting up networks and printers to run at maximum efficiency. Using a Scalextric-style track onscreen to represent a local area network (LAN), you zip round a series of progressively more difficult tracks as fast as you can. You can play against your PC, or four players can compete over the LAN in the office, but you can't play it over the Net.

Choose your vehicle – you can race in a taxi, if you want to

Dotted around the track (but remember, it's really a network) are various HP JetDirect printers and products which provide your car with extra speed and turbo power-ups. So far so normal. But if you make contact with a badly configured printer, your car loses speed and position. So the idea is to learn about correctly configured printers and servers on the network because they'll improve your chances of winning the race.

The Web site is beautifully crafted with clear graphics, legible text and lots of areas to explore. But best of all, the game is fun. Set up a little league in your office and play like crazy over the LAN. It's great.

Clive Parker

www.hp.com/go/racing

Design ★★★★☆
Content ★★★★☆

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Online Games Room www.matica.com
Windows 95 Racing Games www.winfiles.com/apps/98/games-racing.html
Monster Truck Madness ftp.microsoft.com/deskapps/games/public/monster/mtm2trail.exe

You've got the green light to download from here

HOW DO THEY DO THAT?

Clive Jackson, creative director and CEO of Global Beach, designers of the HP JetSpeed Network Racing Challenge, explained the genesis of the game. "The brief from HP was to come up with a way to use new media to raise the awareness of the JetDirect product range, and to do it in a way that would encourage people to spread that message by word of mouth. In doing that, we have created a relational marketing tool that will encourage people to come back to HP again and again and educate them not just about HP products, but also on how to upgrade their LANs for more efficient operation." Sounds like a cynical marketing ploy to me, but I've been won over.

FT Quicken

Online money management with the Web novice in mind

Financial services are fast becoming as hot a topic as portals, if the recent crop of new sites is anything to go by, but is FT Quicken going to set the pace? The site, a joint venture between the *Financial Times*, Intuit which developed Quicken personal finance software, and search people Excite, aims to provide a comprehensive resource for those who want to manage their money better.

The FT has editorial control over the site, which was built mainly in California by Intuit, with Excite providing some of the back-end tools. "It's been quite a challenge getting the three companies working together, but we're more powerful together than separately," says Alan Vanstone, project manager at FT.com. And with more than a million page impressions within two months of launch, prompted by banner exchanges alone, he has a point.

Moving around is easy and the content is broad, covering mortgages, tax, pensions, investments and savings. Online calculators convert currency, work out mortgage payments and calculate tax, and if you've got Quicken 98 you can download direct from the site.

That the site is functional is no surprise. No flashy graphics here, just fast facts. The content lacks depth, but this is being addressed. "Over the next few months we'll be adding a lot, including many of the features of our US site **www.quicken.com**," said Tony Macklin (check title) head of marketing at Intuit UK. When they do this could prove to be a killer resource.

Ruth Allen

www.ftquicken.co.uk

Design ★★★☆☆
Content ★★★☆☆

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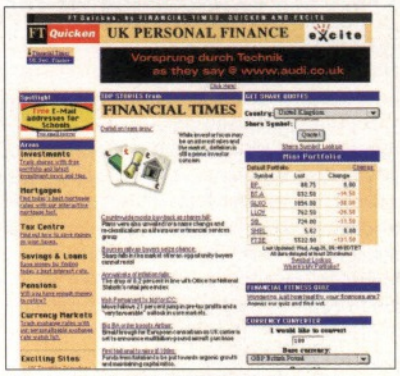

Plenty of tools and calculators help you to manage your money online

site surveyor

Ted Baker

Plenty of Flash, but to slightly confusing effect, on this PR-shy site

If you see hoards of lager-swilling lads in bright pastel shirts queuing for a club, chances are they're wearing a Ted Baker. Yet unlike other designer labels, this Cool Britannia fashion brand operates a strict no advertising policy. That's why, when it comes to getting a presence online, it's opted for a characteristically left-field approach.

The site sets out to be less a Web site and more a multi-faceted software experience. The result, designed by London Web house Designercity (Firetrap and TescoNet), is a monster of a site dependent on Flash technology to get you around and more than a little bewildering on first viewing.

"The aim was to give the user something different, something a bit more risky, edgy," explains Stuart Edwards, art director at Designercity. "And if that means forcing people to download a plug-in, it's worth it. Besides, as we're targeting exciting Ted Baker customers, they're the kind of people who are willing and able to download."

Edwards worked with an in-house designer at Ted Baker over three months to get the site up and running. Money wise it's "a substantial long-term investment", for which you get a multi-frame control panel style interface linking through to content areas via a series of drop-down menus.

"It was a pretty challenging site to put together, especially co-ordinating the Flash with the HTML," says Edwards. "We had to balance keeping the navigation intuitive with experimenting, keeping people interested enough to come back and explore more."

So it looks smart and has lots of groovy effects but where are there clothes ? "The first collection will be up there soon and we hope to have online shopping," says Edwards. "By the time we launch version 2, for the spring collection, we may have found something better than Flash for navigation."

David Atkinson

www.tedbaker.co.uk
Design ★★★★☆
Content ★★★☆☆

As Ted doesn't advertise he tries to speak to his customers in other ways. One of those ways is through the use of visually funny and quirky points-of-sale and seasonal showcards. These images, tailored to a particular brand and to the country that they appear in, reinforce the 'not too serious, but serious enough' approach that shows Ted Baker to be the market leader that he is.
TBS miniview
TED BAKER
The site's interface takes a control panel-type approach to navigation

GET SHIRTY WITH...
Firetrap www.firetrap.co.uk
Paul Smith www.paulsmith.com
Esquire www.designercity.com/esquire

HOW DO THEY DO THAT?

Given that it's an eye candy heavy Flash-tastic all or nothing experience, what the hell's going on? Edwards explains: "We used Flash 3 with one Flash movie to keep file sizes down to 500Kb and Freehand 8 to create the vector graphics. Having formulated the line drawings, we then copy and paste them into a Flash movie to convert it to a Flash vector where we can edit it, incorporate sound and animation. Flash 3 works well because it keeps the file size low and is compatible with Freehand."

Virgin Travel Net

Online travel is next up for the Virgin treatment, but it's a crowded market...

Last minute bargains and an accommodation finder are soon to be joined by comprehensive Travel Guides

Given that the Branson empire already includes both Internet and airline businesses it seemed inevitable that sooner or later Virgin Net would throw its towel on the online holiday sunlounger. But has the Virgin Net Travel Channel got what it takes to see off some well-established competition?

Designed and built in-house by Virgin's 25-strong team, the site is neatly organised, if bland in its look and feel. Debbie Caldicott of Virgin Net says, "Our aim is to offer a 'holiday portal' where travellers can find all the information they need." To that end, LeisureHunt has provided a comprehensive accommodation finder covering everything from youth hostels to luxury hideaways, together with maps and details of tourist attractions near the hotels. You can also choose from over 70,000 last-minute package tour bargains from travel agent Holiday Express. The Virgin connection is discreet, and the site doesn't push either the Virgin Holidays or Virgin Airlines brands at the expense of other companies. This is a bonus, but the site does lack a comprehensive list of links to other useful Web pages.

Some interactivity and a nod towards the creation of a travel 'community' comes from threaded discussion groups where travellers can share tips with like-minded souls. You can also pick up country information from Travel Guides, the industry bible, and Lonely Planet. When I visited the site, this section was still under construction, with vast swathes of the world captured by the immortal phrase 'the travel facts for this country will be available shortly'.

Once the country guides are finished, this site could be a useful resource, but it's got some stiff competition and it's going to need more differentiation and plenty of marketing to claim its place in the sun.

Ruth Allen

www.virgin.net/travel
Design ★★☆☆☆
Content ★★★☆☆

GET PACKING
Bargain Holidays
www.bargainholidays.com
A2b Travel www.a2btravel.com
Travelocity www.travelocity.com

CLICK HERE

Scour.Net seeks out sights and sounds

Scour.Net is being touted as the first search engine that specialises in finding multimedia on the Net. It works by scanning the Net exclusively for audio, video and images. The index of images runs to one million thumbnails. Random searches on Martin Luther King yielded nothing; a search for sound files relating to John F Kennedy brought me 25 results, although most of these came from John Candy's Sound Gallery (he played Dean Andrews in the film *JFK*). It's a great idea with piles of potential, but it's not there yet.

www.scour.net

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THE BUILDER

He dons his hard hat, shuns his fried breakfast and goes behind the scenes to bring us the gossip from the Web design industry

Unavoidably detained

In the building trade, you're always stumbling upon cordoned-off sites declaring 'under construction', or 'on holiday, will be finished soon'. However, former MI5 agent David Shayler has more of an excuse than most for the lack of content on his site. After making public his plan to post state secrets on his own Web page he was detained in Paris. It's a pity, as he promised to put up files on home secretary Jack Straw's student days.
www.shayler.com

Web cam, thank you ma'am

JenniCam faces some stiff competition from Bravo, the satellite television channel. It's hoping to erect an extension to its site which includes wiring up Web cams to four 'professional' ladies living in the London area. Cameras will be positioned in each of the girls' bedrooms and in the communal living space. The cynical among us may view this as a blatant attempt to attract male visitors. I for one wouldn't dream of installing a Web cam on the dash of my Ford Transit. What goes on between me and my van is not for public consumption.
www.bravo.co.uk

Hearts and minds

So we've had birth, death and more sex on the Web than I care to remember. Now we can add open heart surgery to that list. The American Health Network broadcast the operation on 19 August, after Dr Walt Larimore and his patient Rena said a quick pre-op prayer. Dr Walt was quick to whip his scalpel out, as there was a race between AHN and another American health organisation to be first to perform the op. The event was broadcast in the hope of stimulating awareness of the problem of heart disease. It only stimulated my Pyloric Sphincter to contract sharply and force my fried breakfast back onto my plate.
www.ahn.com/liveevents/openheart/f_main.htm

The New York Times

Famous paper's revamped Web edition is now free

The New York Times has a global reputation. Even if you've never seen a copy of the paper, the odds are you've heard of it. *The New York Times* on the Web has recently undergone a redesign, and is now free to overseas subscribers.

The site has a clean look to it, using a traditional three-column, black on white scheme, and best of all, there are no banner ads on the front page.

So what's the thinking behind the new layout? Rich Meislin, editor in chief of The New York Times Electronic Media Company, explains, "There were several goals geared to making the site easier to navigate and use. Breaking news from Associated Press was one of our most popular features, so we moved it to the front page."

The ease of navigation around the site is one of its most appealing features. "We're trying to put the fewest number of clicks between our readers and the information they're seeking. There's a tremendous amount of material in the printed paper each day, as well as articles and features we produce ourselves and gather from the AP and other sources. Organising that so that people can find what they want quickly and intuitively is a continuing challenge."

One nifty feature is the automatic refresh tag on the homepage. It reloads the front page every 15 minutes.

The *NYT* on the Web has been a subscription paper outside the US since its inception, so why is it now free? Meislin says: "The international charges were really throttling our international readership. Since dropping the overseas subscription charge a few weeks ago, we've picked up more than 100,000 new international users."
Clive Parker

Everything you need to know in New York tomorrow... restaurants

The New York Times ON THE WEB

WEDNESDAY, AUGUST 26, 1998

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PAGE ONE PLUS
International
National/N.Y.
Politics
Business
Technology
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Weather
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Russia P.M. Tries to Reassure Investors as Ruble Falls Again

MOSCOW -- Russia's acting prime minister tried to reassure investors on Wednesday after investments plunged in value under a drastic plan to restructure Russia's enormous debt. Go to Article

U.S. Investigating Microsoft's Connection to Intel Decisions

The U.S. is investigating whether Microsoft has used its market muscle to force Intel, its only real peer, to shelve new technology efforts that conflicted with Microsoft's ambitions. Go to Article

Egyptian Authorities Hold

NATIONAL
Lewis F. Powell Jr., Crucial Centrist Justice, Dies at 90

INTERNATIONAL
China Admits Ecological Bias

The site's redesign moved more popular elements to the front page

www.nyt.com
Design ★★★★★
Content ★★★★★

READ ALL ABOUT IT

The Times www.the-times.co.uk
The Los Angeles Times www.latimes.com
Western Daily Press www.westpress.co.uk

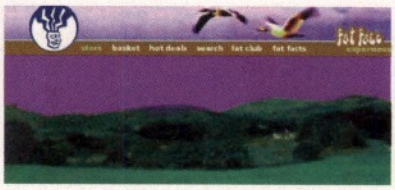
Fat Face

For dedicated followers of fashion

Taking pictures of the latest fashions, putting them on their sites and waiting for the crowds to flock is as far as many retailers have come to addressing the issue of e-commerce. Fat Face, retailer of lifestyle clothing, is hoping to take this a stage further. Through a partnership with designers Blueberry New Media, it's used pioneering technology to develop a stylish and creative Web presence.

On first inspection, the site looks like other online retail outlets. You'll find product search facilities, an online shopping basket and a loyalty scheme in the way of Fat Calories. And, with an eye on the international market there's a link to a currency converter created by Oanda (**www.oanda.com**). What sets the site apart are the close-up images of the clothing that's on sale – right on the button.

Blueberry New Media and Fat Face also have a performance-related partnership which means Blueberry partly funded the project, in return for a sliding scale commission from Web site sales. Smart.
Paul Bennett



Fat Face hopes to take fashion sales a step further

www.fatface.co.uk
Design ★★★★☆
Content ★★★★☆

TRY THESE ON FOR SIZE

Diesel http://ukstore.diesel.com
Timberland www.timberland.com
The Gap www.gap.com

HOW DO THEY DO THAT?

Blueberry New Media used Hewlett Packard's Open Pix imaging technology to give the site its competitive edge. Open Pix technology lets you examine Fat Face's clothes in minute detail – you can zoom in on the patterns and stitching without losing any picture quality. Piers Hogarth-Scott, new media director, explains: "One of the problems of the Internet is the file size needed to store realistic images. This is a particular problem with clothing. The beauty of Open Pix is that it gives you a realistic view." Each Open Pix file is about 2Mb, which is usually an unmanageable size. But the technology works like an incremental download. It only pushes the number of pixels you need and as you move about the image, it just fills in the gaps, like graphics on demand. Each image you look at is about 100Kb." Blueberry is the first company outside of the US to use this technology. The site is set to be released in the UK in October.

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Scores on the doors for BBC

I've half been expecting a call from the BBC in the last month. If ever there was need of some structural realignment, it's at Broadcasting House. However, the BBC news team appears to be on firmer footing after its viewing figures were announced and it elbowed its way ahead of *The Times* (**www.the-times .co.uk**) and *The Sunday Times* (**www .sunday-times.co.uk**) in terms of page impressions to take the top spot in the UK news tables. The Murdoch stalwarts took 5 million and 5.5 million page impressions per month respectively, but Auntie topped out at 13.5 million.

Harsh words on pants

Kerb, the guys that brought the Mathmos Lava Lamp to the Web, is inviting people to vote for its pants site of the month. Current top spot in the underwear arcade is held by Technics (**www.technics.co.uk**) which "should be rocking the Internet world, not boring it to death with its half-arsed attempt of a site. So stick needles in your eyes... you'll be glad you did."
Can't say fairer than that.
www.kerb.co.uk/site/nonsense/index.htm

Bigger fish to fry

Finally, an account that bypassed all the major players. It's no good crying over spilt lard, but Benny's Fish 'n' Chip shop has made its online debut. By providing a new fish recipe every week and shifting prizes which include a fish supper for two and a jar of pickled eggs, it's already a winner.
www.lapis.ndirect.co.uk/valley/bennypictures.htm

The Builder scratches his arse, then scratches the surface of the latest events in the online design world. If you're a designer, if nobody else will listen and if you can be bothered, email me at thebuilder@internet.emap.com

Mirror Photo Library

A snappy news and archive photo service from Mirpix

This site, from Mirror Syndication International, is an interactive picture library. Two years in the making, the site's database contains over 250,000 images, and is aimed at the general public as well as the business and publishing markets. The images are divided into collections including Politics, World of Sport, Silver Screen, Fashion, and Glamour. All images come from the Mirror Group's archive of 30 million pictures, dating back to 1903.

Although anyone can buy prints, the site is a resource for professionals, and business users can download files in several formats. Frank Walker, MD of Mirror Syndication, sees the venture as a logical step. "It carries us into markets we wouldn't otherwise reach." Daniel Singerman, Mirror Syndication's media developer, agrees: "Within the confines of available technology, the Internet is the ideal medium for the picture syndication business."

The feedback from picture researchers checking out the site indicates they'd consider using it, based on the speedy page downloads alone. Images are in thumbnail format (each image is about 10Kb), with searchable captions, and can be added to a shopping basket. The selected pictures can then be ordered from the shopping basket page. High-resolution images will be available online soon, and all images can be bought from the site, or by phone, fax or email. Photos are delivered by ISDN, disk or hard copy.
Elaine Hernen

www.mirpix.com
Design ★★★☆☆
Content ★★★★☆

HOW DO THEY DO THAT?

The site links its huge image bank from an Informix database into a Web front-end application, using Universal server and Web Blade technology. The Informix facility is housed with Planet Online, the largest Web server facility in Europe, giving the site the backbone access it needs.

Frank Walker says, "This site cuts out the middle man. Instead of six people going through files, there can be thousands of people choosing exactly what they want – everyone becomes their own picture researcher."

SAY CHEESE...

DigitalVision www.digitalvision.ltd.uk
Image Bank www.imagebank.co.uk
Hulton Getty www.getty-images.com
Photodisc www.photodisc.com

CLICK HERE

Step back in time with iPONG

A favourite game on the Atari VCS console was Pong. It's now come to the Web in the guise of iPONG, a Web site with a licensed version of the classic Pong game, a pumped-up 3D version of Pong called Power iPONG and a trivia quiz.

The classic version uses your mouse to move the paddle up and down to recreate the original version's game-play, although the graphics have been updated. Power iPONG is a worthy successor to the original game, 3D graphics adding extra elements of skill to the game. The trivia challenge has over 60,000 questions, and you have to answer 12 each time you play. All the games offer cash prizes for the top weekly scores.
www.ipong.com

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Just answer these easy questions and email your answers over to us at dellcompo@internet.emap.com by 24 October 98.

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Angel House, 338-346 Goswell Road,
London EC1V 7QP

The Questions

1 What Dell products power the Dell Web site? (You'll find clues on the Dell homepage)

2 Complete the following statement
(again check out the Dell homepage)

The World's _____

_____

_____ computer systems company

3 What does URL stand for?
A Universal Resource Locator
B Unique Resource Locator
C Uniform Resource Locator

4 What does e-commerce stand for
A Extended commerce
B Electronic commerce
C Ether commerce

Read the rules

The judges decision is final and no correspondence will be entered into. ●The competition is open to all UK residents except employees and their families of Dell or Emap, their agents or anyone connected with the competition. Under 18s must supply the written consent of a parent or guardian. ●There are no cash alternatives to the prize offered. ● No responsibility is accepted for any entries lost, delayed or damaged in the post. Proof of posting is not proof of delivery.●The winning entrant will be drawn on 2 November will be notified by post by 16 November. ● Internet Magazine will publish the winner's name which can also be obtained by sending an SAE to Internet Magazine, Angel House, 338-346 Goswell Road, London EC1V 7QP

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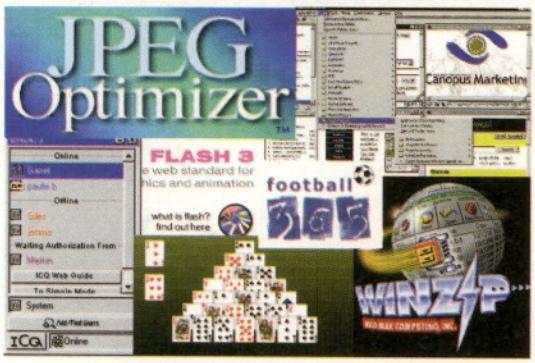
As well as the usual haul of quality reveal their favourites and invite



Internet Magazine's top 10 downloads

We need your help. Tell us which downloads you've found invaluable, and each month the best one will win a year's subscription to *Internet Magazine*. Just send your top downloads to **hot@internet.emap.com**. To get you started, here's the *Internet Magazine* team's top 10...

JPEG Optimiser **www.xat.com**
Mike Slocombe (Web design guru and panel of experts member) "As I'm a saddo obsessed with shrinking files down to their tiniest components, this is the fella for me."

Apple Data Detectors 1.0.2 **www.tucows.com**
Mike Hales (Online Editor) "This detects any email address or URL in a document and gives one-click access to them."

WinZip **www.winzip.com**
Roger Gann (panel of experts member) "The best file compression/decompression software... ever!"

Paint Shop Pro v5 **www.jasc.com**
Richard Baguley (Technical Editor) "It's great for graphics and should be on everybody's machine."

Football 365 **www.football365.com**
Tanya Kreisky (Production Editor) "Personalised football news emailed to you daily – what more could you want?"

ICQ 98 **www.mirabilis.com**
Gail Robinson (Editor) "OK, it's not the most reliable chat client, but it is free . And it's great for chasing freelancers."

Macromedia Flash **www.macromedia.com**
Craig Lancaster (Art Editor) "Continued development over the years has turned this into a must-have product."

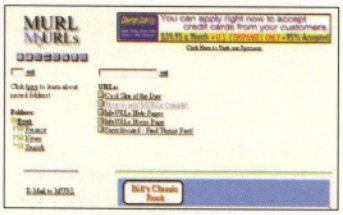
BookMarx **www.msw.com.au/bwolf**
Paul Bennett (Reporter) "It keeps an eye on your Bookmarks and Favorites and lets you know when links change or die."

Opera **www.operasoftware.com**
Mike Bracken (Consultant Editor) "A browser that fits on a floppy disk and it's faster and smarter than the big boys."

Pretty Good Solitaire **www.goodsol.com**
David Parry (Cover CD editor) "With 175 different Solitaire games, can you have more fun on your own?"

Murl

This download was recommended by an *Internet Magazine* reader – thanks, Jamey Steffen. It's a Bookmark manager that stores your details online so you can access your Bookmarks no matter what computer you're using. Adding Bookmarks is simple – if you're using a JavaScript-capable browser, you can convert your existing URLs. Otherwise, you can add Web addresses to your list as you surf.



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Price *Free*
Platforms *All*
http://murl.com

Handy Email 1.0

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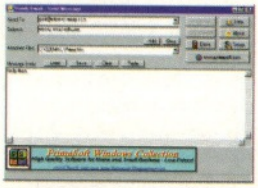


Handy Email gives you basic features and lets you add attachments to your mail

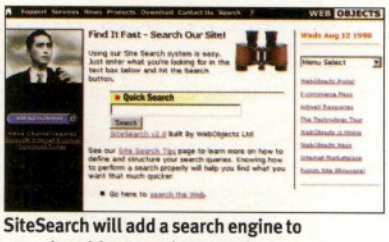
Price *Free*
Platforms *Windows 95/98/NT*
Download size *230Kb*
www.primasoft.com

ShareTheNet

If you need to share your dial-up Internet connection across a network, this is worth investigating. One of your computers will act as the gateway server, but beware, this machine won't be able to run other applications at the same time.

Setting up the client machines is pretty simple too. The demo version works for 30 minutes after you boot up the gateway server, but you can reboot to get another half hour.

Price *$70 (around £43)*
Platforms *Windows 95*
Download size *3.44Mb*
www.softwaresuperstore.com/products/ShareTheNet



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WebPal-It!

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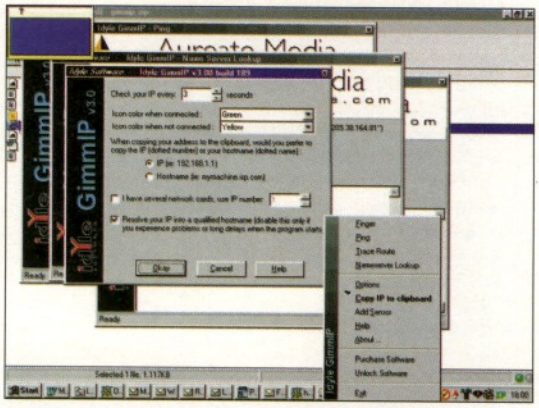

Idlye GimmIP can track down all your Net connection problems

Idlye GimmIP

Idlye GimmIP keeps track of what your dial-up Net connection is up to and tracks down any problems with your connection – whether it's a dodgy DNS server or a manky mail server. It also shows how fast the Internet is performing and gives you instant access to Finger, Ping, nameserver lookup and trace route clients. Download it for the Net geek in your life.

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Launch one of the suite of applications from the PowerTools main menu

HTML Power Tools

Touted as the Swiss army knife of HTML tools, this is a feast of design goodies. In the 4.2Mb download you'll find an HTML syntax checker and link validator; a site spellchecker which supports multiple languages, HTML Meta Manager to make sure your site gets listed in the top search engines, and an HTML to Text Converter which – you guessed it – converts HTML documents into text. You're bound to find something useful.

Price *$59.95 (around £35)*
Platforms *Windows NT/95/3.x*
Download size *4.2Mb*
www.tali.com/tools.html

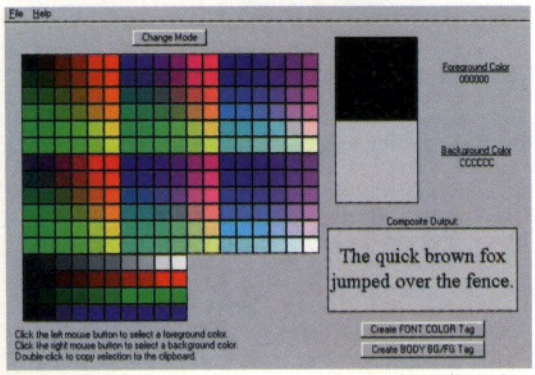
palette on the screen and lets you try out combinations of colours. Once you're satisfied with your colour selections, WebPal-It! kindly goes away and creates the code for you and copies it to the clipboard. Now you can take that code and simply insert it into your HTML.

Price *Free*
Platforms *All*
Download size *32Kb*
www.bfree.on.ca/vmall/pcmax/wp

Huey

This is a Web designer's delight – an HTML colour generator that converts RGB values to Hex and back again. You can mix colours direct on screen or paste them from other applications. And it's easy to save whole colour schemes.

Price *Free*
Platforms *All*
Download size *284Kb*
www.lightman.co.uk/software/huey/


File Help
Change Mode
Foreground Color
000000
Background Color
CCCCCC
Composite Output
The quick brown fox jumped over the fence.
Create FONT COLOR Tag
Create BODY BG/FG Tag
Click the left mouse button to select a foreground color.
Click the right mouse button to select a background color.
Double-click to copy selection to the clipboard.

WebPal-It!: Get your colour schemes sorted out and have the code written for you automatically

Arachnophilia

This easy to use Web building program will take formatted text, tables and outlines from any Windows 95 application and convert them to HTML. It's free and comes with guides to HTML development, JavaScript and frames.

Price *Careware*
Platforms *Windows 95/98/NT*
Download size *1.76Mb*
www.arachnoid.com/lutusp/arach.html

ReGet Pro

Heavy downloaders will know there's nothing worse than downloading a file, having it cut off halfway through and having to start again. ReGet resumes broken downloads where they left off and lets you set up download queues. The program integrates with IE4.

Price *$20 (around £12.20)*
Platforms *Windows 95/98/NT*
Download size *1.2Mb*
www.reget.com

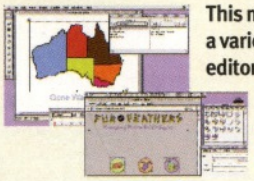
In Tried & Tested

Internet Magazine is committed to bringing you the best and most authoritative reviews in the Internet industry. Every month we test and rate the most important new Internet products. If you're making a buying decision or doing a bit of pre-purchase research, the following pages are not to be missed.

In Tried & Tested you'll find the latest news on just-announced products, hard-hitting reviews of key product releases and comprehensive Labs tests.

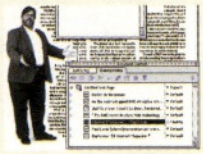
On our Web site at www.internet-magazine.com/reviews/ you'll find a database of all our reviews from the last year.

Key reviews for October



This month the Labs team puts a variety of high-end HTML editors to the test. Top marks go to Cyberstudio and Dreamweaver.
See page 86

ImageReady 1.0 is a slightly clunky way to fine tune images for the Net, but it's well worth the price
See page 95

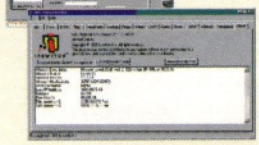


Version 4.0 of the Beyond Press Quark/HTML converter is out. It's definitely an improvement, but just how good is it?
See page 96

Is the latest version of NT Mail server software a step in the right direction?
See page 96

OfficeConnect is a cheap, easy to install router, perfect for the small business.
See page 97

The Olitec is a minscule, multi-purpose modem that does it's job.
See page 98



Ping ProPack 2.1 is a mixed bag of Net tools and utilities. Strictly for Net-heads
See page 98

Zoom's modem supports both 56K modes and doesn't cost the earth.
See page 99

Star Ratings

★★★★★ Must buy
★★★★☆ Should buy
★★★☆☆ Could buy
★★☆☆☆ Poor buy
★☆☆☆☆ Don't buy

High-end HTML tools

If you want to stay on the cutting edge of Web page authoring, you need the right tools. Cliff Joseph and the Labs team pick the best high-end HTML authoring programs

It's not easy being a Web designer. The Net moves so fast it's often difficult to keep up. No sooner have you got to grips with push channels, streaming video, and the latest batch of plug-ins, than another new technology pops up and demands to be used on your Web site. The latest addition to the designer's toolbox is Dynamic DHTML (DHTML). The specification for DHTML has been around a while, and if you were happy to hand-code all the new tags yourself, it was easy to experiment with. But it's only recently that HTML editing programs have caught up and begun to provide DHTML tools the rest of us can use.

The difference between DHTML and bog-standard HTML is simple. It's that 'D', which stands for 'Dynamic'. Conventional HTML pages are, for the most part, static. They sit there happily displaying text and graphics, but not really doing much else. You can click on URLs, and fill in simple forms, but the basic look of the page doesn't change.

Dynamic HTML lets you change the appearance of your pages in a number of ways. Some of the editing programs reviewed here merely define it in vague terms, saying something like, 'DHTML provides greater control over the appearance of your pages', which is no help to anyone.

DHTML is an umbrella term, it covers a mixture of JavaScript, cascading style sheets, and the Layer tag. And, to complicate things further, Microsoft's version of DHTML can also make use of ActiveX.

Put simply, DHTML lets you place page elements on their own separate layers on the page. The behaviour of these layers can then be controlled using JavaScript, ActiveX or style sheets. This lets you move the layers around the page, dynamically alter the content of the layer, or use layers to create interactive controls. The things you can do with DHTML range from simple effects, such as animated buttons, to the complex games and applications that companies such as Walt Disney have on their Web sites.

Some programs, such as DreamWeaver and CyberStudio use DHTML primarily as a way of creating animations. FrontPage has lots of DHTML features, but it doesn't label them as such, so you may find you're using DHTML without realising it.

The editing programs reviewed here implement their DHTML features in different ways. The simplest approach is typified by FrontPage 98 and HoTMetaL Pro, both of which cost about £100. These programs provide a series of predefined DHTML animations which you select from a pull-down menu. FrontPage also uses Java and ActiveX to provide more complex features such as a banner ad manager that you can use to create a rotating billboard of adverts. These features are easy to use

Browser compatibility

The first thing you need to know about DHTML is that visitors to your site will need a version 4 browser to view it properly. Some of the more powerful editing programs, such as DreamWeaver and CyberStudio, do let you export pages that will display a simple static image instead of an animation when the page is viewed in a 3.0 browser. Without this option, the browser may simply display a blank area where the DHTML should be. These programs are the exception rather than the rule, so bear this in mind when working with DHTML.

And there are problems even when it comes to the most up to date browsers. Netscape Navigator and Microsoft Internet Explorer handle DHTML in different ways, so DHTML that works properly in Explorer 4 might not work in Navigator 4.

Again, the more sophisticated editing programs provide options that let you test your DHTML in different browsers. CyberStudio even attempts to create a kind of 'unified' DHTML that will work efficiently in both browsers.

In contrast, other editors just concentrate on one particular browser. Some of the DHTML animation effects in Microsoft's FrontPage won't work at all in – surprise, surprise – Navigator 4. The same is true of the DHTML effects in HoTMetaL Pro.

You should, therefore, watch the browser compatibility issue carefully. Some people argue that Java will eventually make DHTML redundant because it doesn't suffer from these compatibility problems. Animation programs such as Flash also produce files that can be used in a wide range of browsers. But DHTML is quick and easy to use, so it will probably remain a popular Web technology for some time. There's some useful information on creating cross-browser DHTML on Netscape's OpenStudio Web site at **http://developer.netscape.com/openstudio/home2.html**.

"DHTML is an umbrella term. It covers JavaScript, cascading style sheets and the Layer tag."

High-end HTML editors compared

Manufacturer	Product Name	Price	Contact	Platform support	Built-in preview mode	Site-management mode	Automatic site-generation	Automatically apply styles to new sites
GoLive	CyberStudio 3.0	£325	(0181) 358 5857	Mac	✔	✔	✘	✘
Macromedia	DreamWeaver 1.2	£229	(0181) 358 5857	Mac/Windows	✘	✔	✘	✘
Microsoft	FrontPage 98	£99	(0345) 002 0000	Windows	✘	✔	✔	✔
NetObjects Europe	Fusion 3.0	£199	(01628) 666 363	Mac/Windows	✘	✔	✔	✔
SoftQuad	HoTMetaL Pro 4.0	£99	(0181) 387 4110	Windows	✘	✔	✘	✘
Symantec	Visual Page 2.0	£69	(01628) 592 222	Windows	✔	✔	✘	✘

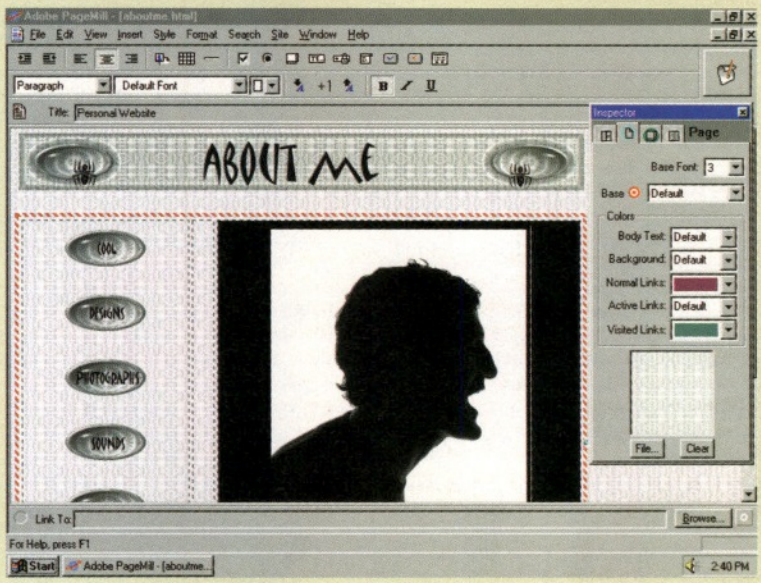
Beginners start here

The programs reviewed here are some of the most advanced and complicated Web design tools available. But not everyone needs state of the art DHTML support. If you're just getting started with Web design, you're probably better off with a program such as PageMill 3.0. This contents itself with basic HTML design, and has absolutely no support for DHTML. In its favour, it's incredibly easy to use and is the ideal choice for newcomers.

PageMill's great strength is its drag and drop interface. You can perform most basic editing tasks simply by using the mouse to select and move items around the page. You can drag graphic files onto your pages straight from the Mac or Windows desktop, and you can even create links between pages by using the mouse to click on the beginning and end points of the link.

If you want a little more precision than the mouse can provide, use the Inspector palette to adjust properties such as the size and position of images, as well as attributes such as background images and the colours used to indicate links. Its frame tools are excellent – better than most of the more advanced programs included in our main review. All you have to do is click on the margins of your page and drag a new frame into position.

There's no support for DHTML, but you can insert Java applets and scripts and ActiveX controls. The Windows version also comes with a good selection of ready-made applets that you can use, as well as loads of clip art images. PageMill is available in both Mac and Windows versions, although the Mac version is stuck at Version 2. Mac users looking for a good place to get started are probably better off opting for CyberStudio Personal Edition.



PageMill's drag and drop interface makes basic editing easy

because you only have to select them from a limited set of menu options. But this means you're limited solely to the effects included on the menu, and it's not easy to create new effects of your own.

A more powerful way of implementing DHTML is provided by DreamWeaver and CyberStudio. These two programs provide a time-line window which gives you complete freedom to create any type of animation you want.

You can place multiple layered elements on the page and move them individually, or choreograph their movements to create extremely complex animation sequences. DreamWeaver and CyberStudio provide far greater flexibility and control over DHTML animation than any of their rivals. But this extra power costs a lot more, and demands more effort to master. As a result, both these programs are aimed at the professional Web designer rather than the home or business user who wants to knock up a few Web pages in a hurry.

Advanced design

But DHTML isn't the only thing to look for in an advanced Web design program. Most of these programs provide ready-made JavaScripts or applets that can be just as useful as their DHTML features. And here again there's a divide between the less expensive programs which provide a simple pull-down menu with a list of options, and the professional programs that let you create more complex interactive actions and behaviours.

Then there are programs such as Visual Page and Fusion that just go off and do their own thing in their own way. However, these two programs do have their merits. Visual Page relies almost entirely on Java to create dynamic effects, so experienced Java developers will feel right at home. Java is also less likely to suffer from browser compatibility problems than DHTML (see box opposite). Fusion is a bizarre piece of software which you'll either love or hate. It does, however, have the ability to easily create links with data files from external databases, which will be useful for many corporate users.

The most striking thing about this group of programs is how different they are from one another. One spreadsheet program looks much like another, but these Web design and editing tools are a law unto themselves. They share many of the same features, but each implements these features in a different way and presents them to the user via dramatically different interface designs.

In short, these programs are as varied as the people that use them. There's something for the creative designer, the ambitious home user and corporate e-commerce types. Choosing between them can be a difficult and confusing task. Fortunately, most of these programs are also available in trial form, so take your time and experiment with them before deciding which one is right for you.

Cascading style sheet support	Java/ JavaScript	Java applets included	JavaScripts included	Controls included	Animation effects included	Time-line animation supported	IE4 DHTML support	Navigator 4 DHTML support	Star rating
✔	✔	✘	✔	✘	✘	✔	✔	✔	★★★★★
✔	✔	✘	✔	✘	✘	✔	✔	✔	★★★★½
✔	✔	✔	✔	✔	✔	✘	✔	✘	★★★★½
✔	✔	✘	✔	✘	✔	✘	✔	✔	★★★½☆
✔	✔	✔	✔	✘	✔	✘	✔	✘	★★★½☆
✔	✔	✘	✘	✘	✘	✘	N/A	N/A	★★★½☆

+

+

=

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GOLIVE

CyberStudio's well-designed interface makes DHTML simple.

CyberStudio 3.0

Highly sophisticated design tool – unfortunately it's for the Mac only

If you ever needed an excuse to buy a Macintosh, this is it. The latest version of the Mac-only CyberStudio is an extremely impressive Web design tool. Its sheer range of features may be daunting at first, but the program's interface and documentation are well designed and easy to get to grips with.

CyberStudio offers many of the same features as Macromedia's DreamWeaver, with predefined JavaScript actions and a timeline window that can be used to create animations. However, being a Mac-only program means it can use the Mac's graphic interface to the full.

The program places its most important tools in two floating palettes. The Object Palette is split into a series of tabbed pages each of which contains a set of icons representing different objects, such as text, graphics or tables. You can add any of these objects to a page by dragging and dropping.

Once this is done, you can move on to the second palette, called the Inspector. It also contains tabbed pages that provide several options. You can use this palette for standard tasks such as creating links, but the Inspector excels when it comes to more advanced features. These vary depending on the object you've selected. If you select a button graphic, the palette lets you animate the button by specifying Mouse Over and Mouse Click states for the button. Select a pop-up menu object, and the palette changes to display labelling options for the menu items. The Inspector also contains an Actions page that lets you connect predefined JavaScripts to most of the objects available in the Object Palette. Actions such as Play Sound or GoTo Link are selected from a pull-down menu, so it's easy to add interactive elements to your pages.

Like DreamWeaver, CyberStudio includes a time-line window, which you can use to create DHTML animations, and the two programs handle animation in a similar way.

The manual is a strong point. It's 700 pages long, is clear and thorough with lots of useful background. The only problem with GoLive's documentation is the lack of tutorials and online help.

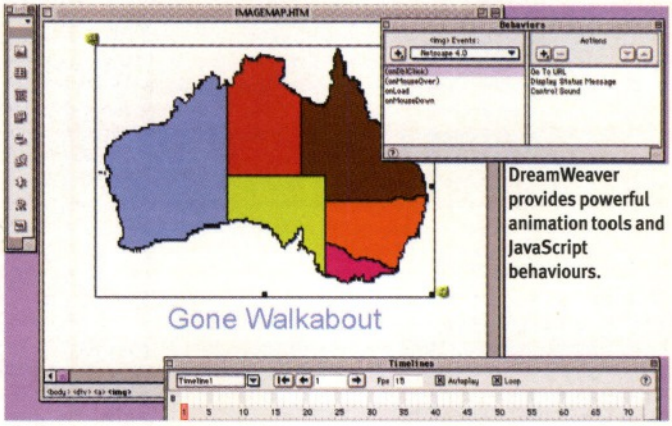
GoLive's focus on the Mac means that CyberStudio supports Apple technologies such as the ColorSync colour management system, QuickTime video and the WebObjects development system used in Apple's online stores.

But the fact that CyberStudio is Mac-only limits its audience. It's also expensive, although version 2.0 has been repackaged as CyberStudio Personal Edition and is available for £99. Nevertheless, CyberStudio is undoubtedly one of the best Web design tools available on any platform.

★★★★★

CyberStudio 3.0
Price *£325*
Pros *Excellent DHTML and JavaScript support*
Cons *Expensive and Mac-only*
Contact *Computers Unlimited*
Phone *(0181) 358 5857*
www.golive.com

MACROMEDIA



DreamWeaver provides powerful animation tools and JavaScript behaviours.

DreamWeaver 1.2

Powerful program strictly for the professionals – needs some skill to master

DreamWeaver is a beast, but it's one of the most powerful DHTML tools available. It's aimed at experienced designers, and there are few of the templates and ready-made Java applets supplied by its rivals.

Programs such as FrontPage cater to less experienced users by providing predefined DHTML effects. DreamWeaver lets you create your DHTML effects from scratch using a time-line window similar to the one in Macromedia's Flash animation program.

You start by creating layers that contain the page elements you want to work with. You can then control the movement of each layer with great precision by using the time-line window to specify the movement and location of each layer at specific times. This gives you much greater control over your DHTML than the predefined effects provided by other editors. However, it may take some time to master DreamWeaver's time-line controls. Matters aren't helped by its manual and tutorials, which are rather brief.

It's also irritating that you have to switch to an external browser to preview pages. If you're trying to fine tune a complex animation, you can spend ages switching between DreamWeaver and your preview browser. However, DreamWeaver does have good options for checking the compatibility of your completed pages with a number of browsers.

DreamWeaver's other strong point is its Behaviours. These are ready-made JavaScripts that you can use to create interactive controls. A Behaviour consists of an Event, such as a mouse click, and an Action that occurs in response, perhaps starting an animation sequence or playing a sound file. Events and actions are selected from pull-down menus, so it's easy to combine them in different ways. A lot of DreamWeaver users swap Behaviours on the Internet.

The program also provides the standard options for inserting Java applets, ActiveX controls, and a variety of multimedia file formats such as Flash and Director movies, so there's no shortage of options for the more ambitious designer. DreamWeaver should appeal to people writing their own HTML in a text editor. It lets you view pages in graphic and text modes, with both views on screen at the same time. Any changes you make to one are automatically reflected in the other.

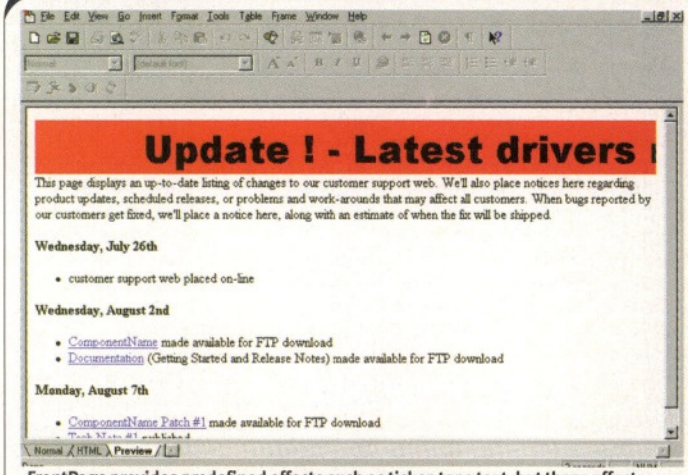
The recent upgrade to version 1.2 brought some welcome improvements, such as a more versatile approach to creating frames. The result is a Web design tool of great power and versatility. Drawbacks are its high price and steep learning curve.

Regardless, serious Web designers should find DreamWeaver is worth the price and effort required to master it.

★★★★½

DreamWeaver 1.2
Price *£229*
Pros *Good DHTML support*
Cons *Not for beginners*
Contact *Computers Unlimited*
Phone *(0181) 358 5857*
www.macromedia.com

MICROSOFT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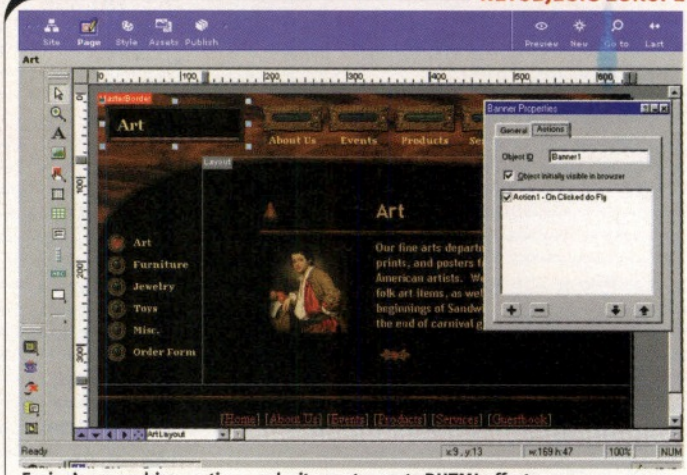
Wednesday, July 26th
customer support web placed on-line
Wednesday, August 2nd
ComponentName made available for FTP download
Documentation (Getting Started and Release Notes) made available for FTP download
Monday, August 7th
ComponentName Patch #1 made available for FTP download

FrontPage provides predefined effects such as ticker-tape text, but these effects may not work with a non-Microsoft browser.

NETOBJECTS EUROPE



Fusion's menu-driven actions make it easy to create DHTML effects.

FrontPage 98

Good for stressed-out business users who want to create a site in a hurry

FrontPage 98 is aimed at the corporate user and takes a much more structured approach than DreamWeaver and CyberStudio. It focuses on the creation of complete Web sites rather than single pages.

When you first launch FrontPage, the Explorer lets you create an entire Web site immediately. All you have to do is choose a ready-made site from a menu, then select a predefined design style that can automatically be applied to all the pages in the site. There are times when the process of designing individual pages seems like an afterthought.

It takes a similar approach to its implementation of advanced features such as DHTML, ActiveX and Java. You can insert JavaScripts or ActiveX controls that you've created yourself, but the program also provides an extensive selection of predefined options, under the heading of Active Elements.

Rather than keeping all the DHTML, Java or ActiveX features together, FrontPage divides them across a series of sub-menus, depending on the function they perform. You'll find a number of DHTML options in the Animation sub-menu. This provides a series of simple animation effects, such as moving an item up or down, or left and right across the page. The Page-transition sub-menu includes transition effects that you can use when entering or leaving a page. There's also an Active Elements sub-menu that gives you a motley collection of options, including animated buttons, ticker-tape text, and hit counters. The only problem is that many of the DHTML animations only work with Microsoft's Internet Explorer browser. Most of the other editors let you specify compatibility with particular browsers.

FrontPage has one other set of advanced features – Components. These provide powerful functions, such as the ability to perform searches of your Web site, or to host Web-based discussion groups. Some of these Components only work if your Web server has Microsoft's proprietary FrontPage Server Extensions installed.

Having all these active elements on a plate makes FrontPage a good choice for business users who don't have time to master the finer points of Web design and DHTML. However, these predefined elements offer little scope for experimentation, and FrontPage doesn't cater for more experienced designers who might want to explore the full potential of DHTML.

★★★★★

FrontPage 98
Price *£99*
Pros *Powerful automated tools*
Cons *Highly structured and rigid design process*
Contact *Microsoft*
Phone *(0345) 002 0000*
www.microsoft.co.uk

Fusion 3.0

Great database publishing, but its rigid style may limit its appeal

Fusion is a weird program. Like FrontPage 98, it emphasises the creation of Web sites rather than individual pages. However, it takes this approach to extremes.

To start work, you first have to create a Web site that contains a default Home Page. The Home Page contains a feature called a MasterBorder, which includes items such as navigation buttons and banner headlines. This acts as a template for all subsequent pages you add to the site. Like FrontPage, Fusion also lets you select a design style that can be applied to all the pages in your site automatically.

This ensures that all your pages conform to a consistent design, which will appeal to corporate users who need help in creating a complete Web site quickly. Unfortunately, this approach will be anathema to designers who want to experiment and produce highly individual page layouts. If you're happy to work within this tightly structured environment, you'll find that Fusion does provide some powerful and versatile features.

In addition to adding Java and ActiveX components to your pages, Fusion lets you import Shockwave movies, VRML models and QuickTime video clips. There's also an option for linking pages to data files imported from Excel, Access and other ODBC databases. This feature will be useful for business users who need to publish price lists, catalogues and similar information on their Web sites.

Fusion also provides some useful DHTML features. It includes a series of Actions, similar to DreamWeaver's Behaviours. These are predefined DHTML effects that can be modified using a series of pull-down menus. To use an action, you simply select an element on your page, such as a button, and then use the Actions palette to link the Action to the selected element.

The first step is to specify a trigger that initiates the Action. This could be a mouse click or the loading of a new page. Then you select the type of Action, such as an animation or a transition effect, from a pull-down menu. The menu-driven process makes it easy to add animations and interactive controls without having to master scripting. If you feel confident enough to tackle JavaScript or VB Script, you can create custom actions.

Fusion won't appeal to all users. It's one of those programs that forces you to work in a certain way. However, its DHTML and database publishing features work well, so if you can handle Fusion's rigid approach, you'll find it powerful.

★★★★★

Fusion 3.0
Price *£199*
Pros *Good DHTML support*
Cons *Rigid working methods*
Contact *NetObjects Europe*
Phone *(01628) 666 363*
www.netobjects.com

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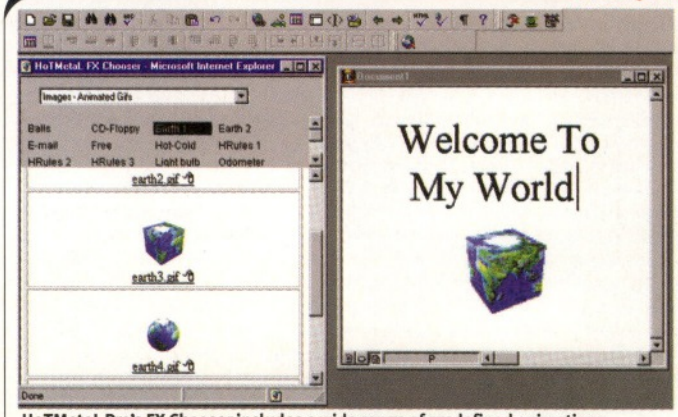
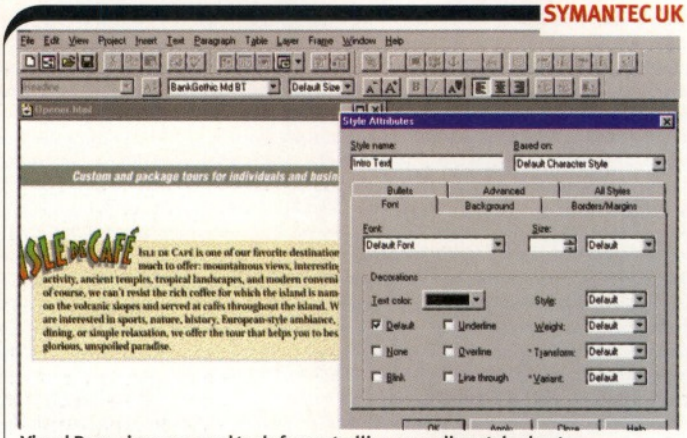
SOFTQUAD



HoTMetaL Pro's FX Chooser includes a wide range of predefined animations.

SYMANTEC UK



Visual Page gives you good tools for controlling cascading style sheets.

HoTMetaL Pro 4.0

Good value extras, but this is a Jack of all trades and a master of none

SoftQuad has opted for a kitchen sink approach with HoTMetaL Pro. HoTMetaL Pro itself is a fairly conventional editing program with some nice features, such as the ability to record macros and to display your Web pages in three separate viewing modes. It supports cascading style sheets, DHTML and ActiveX, and lets you add JavaScripts and applets to your pages. There's even support for the WebTV format used by Microsoft's set-top box.

WebTV apart, most of these are now fairly standard features. But HoTMetaL Pro also includes an extensive set of add-ons and bundled utilities that give you all sorts of advanced features. One of HoTMetaL Pro's best features is the HoTMetaL FX Chooser. This contains an extensive library of predefined effects you can use in your Web pages without any knowledge of programming or scripting. The contents of the FX Chooser are listed in categories in a simple pull-down menu. When you select a category, its contents are displayed in the Chooser window, and you can then add any element to your page by dragging and dropping.

There are a lot of bog standard clip art images in the Chooser, but more useful are the categories of animated GIFs that you can use to add simple animations to your pages. HoTMetaL Pro also includes a bundled utility called GIF Animator, which you can use to create more varied animations.

There's a small selection of Java applets and scripts in the FX Chooser as well, ranging from simple slideshow and animation effects to a 'shopping cart' script that can be used for online shopping. It would be nice to see a more varied selection of applets and scripts here, but again there are bundled utilities that you can use to create applets and scripts of your own if the urge takes you. Other bundled programs include a VRML modeller, an image editor and a database publishing program.

Unfortunately, the DHTML support is a big disappointment. There are just two DHTML effects in the FX Chooser – a fade effect and a tool for creating outline maps of Web sites – and these only work in Internet Explorer 4. Despite all the utilities, there's nothing to help you create your own DHTML effects. And, when it comes to using cascading style sheets, most people will be baffled by SoftQuad's wordy manual.

SoftQuad has spent all its time throwing in added extras, but has overlooked basic points such as its documentation and its frame editing tools, which are horrible.

The extras are good value, but ultimately, experienced designers will prefer the greater depth of DreamWeaver and CyberStudio.

★★★★★

HoTMetaL Pro 4.0
Price *£99*
Pros *Extensive range of bundled programs*
Cons *Poor DHTML support and frame tools*
Contact *SoftQuad*
Phone *(0181) 387 4110*
www.softquad.co.uk

Visual Page 2.0

If you're already a Java expert, this editor will hold no fears for you

Symantec's Visual Page isn't a well-known program, but it's just been upgraded to version 2.0 and it does have some good features that will appeal to experienced Java users. Visual Page's support for DHTML is limited. It does let you create layers and convert existing elements on your page into layers, but that's about it.

There's a layers toolbar that provides useful positioning and alignment tools, but unlike most of its rivals it doesn't have any predefined DHTML effects that you can use to create animations or interactive controls.

The program does provide good support for Java, so experienced Java programmers will be able to create their own Java applets and scripts to control the behaviour of these layers. There's more uniformity to the way that different browsers handle Java as well, so this will help avoid the problems that DHTML has when used with different browsers.

One of the nice features of Visual Page is that it has a built-in preview mode that lets you view Java applets in action. Few of its rivals can do this, as they rely on external browsers to provide previewing facilities. This will save you time when you're fine-tuning page layouts or debugging applets, as you won't have to switch between the editor and an external browser. You can also link the program to any external browser if you want to double-check the final appearance of your pages.

The program also includes a Java console, similar to that found in Symantec's other Java tools, which you can use to debug your applets or scripts. The only disappointment here is that there isn't much in the way of ready-made applets or scripts. The manual assumes you're experienced with Java and will be happy to write everything yourself.

Visual Page does have good implementation of cascading style sheets, though, and its online Help system does a good job of explaining how CSSs work. The Style Sheets dialog box makes it easy to define and add new style sheets to your pages, and there are some ready-made style sheet templates to get you started.

There are improved site management features, with a Project Manager offering different views of the contents of your site. The Link view lets you check for broken links, while other views offer an overview of the site structure and the files it contains. These features make Visual Page 2.0 better for managing large sites than Version 1.0.

The narrow focus on Java means that Visual Page 2.0 is a niche product that will mainly appeal to experienced Java programmers. If you're well-versed in Java, Visual Page may suit you better than some of the other editors reviewed here.

★★★★★

Visual Page 2.0
Price *£69*
Pros *Good Java and cascading style sheet support*
Cons *Limited DHTML features*
Contact *Symantec UK*
Phone *(01628) 592 222*
www.symantec.com

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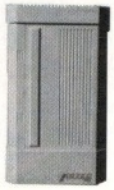

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October's top products

On the conveyor belt this month are an image generator, NT Mail 4, 3Com's LAN modem, a 56K fax/modem bundle, a batch of Net utilities and a dual mode modem. No cuddly toys, though

IMAGE EDITING

Image Ready 1.0

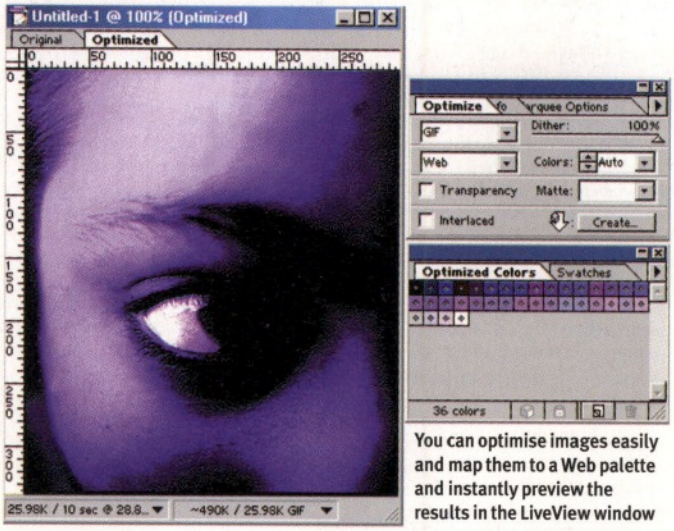
Is Adobe's new image editing program for Web authors just a stunted Photoshop?

Adobe's ImageReady aims to make generating graphics for the Web easier and more efficient. Unlike the more expensive Fireworks from Macromedia, ImageReady is less an image creation program than a way of fine-tuning images for the Web. You can import layered Photoshop (.psd) files straight into ImageReady, edit them, then reopen them in Photoshop. Illustrator documents also keep their layers when imported into ImageReady, although the file will be rasterised.

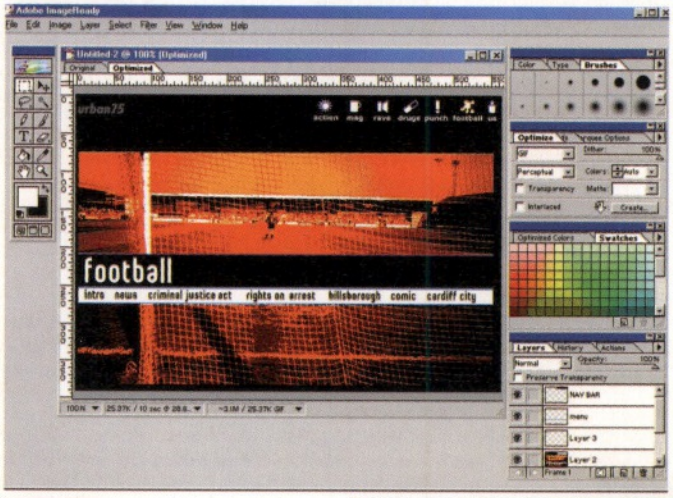
ImageReady has a familiar, cut-down Photoshop-style interface, with the usual mass of Adobe floating palettes. Experienced Photoshop users will find it a breeze to navigate round the program, as many of the shortcuts and commands are the same. There are some curious omissions, though – a fiddly crop command disappears into a sub menu and the useful stroke command vanishes totally.

ImageReady accepts all Photoshop-compatible filters and plug-ins and can seamlessly tile your delightful 3D fractal patterns into hideous backgrounds. The Actions, multiple undo and editable text features of Photoshop 5 are intact, along with a batch processing facility – droplets – a drag and drop utility that automatically processes files using predefined compression settings and actions.

ImageReady's real power lies in its sophisticated tools for optimising and exporting JPEGs, progressive JPEGs, GIFs and the newer PNG format files. Transparency, interlacing, compression and palette choices can be experimented with easily, and the annoying halo effect on transparent GIFs can be banished by selecting your Web background colour as the Matte colour.

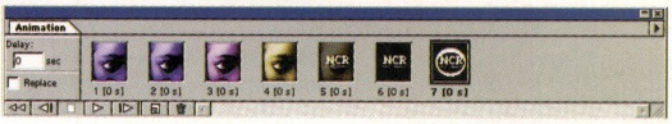


You can optimise images easily and map them to a Web palette and instantly preview the results in the LiveView window



Above: ImageReady's GIF animator is a doddle. Build up animations, edit them using Photoshop layers, and play back

Right: Photoshop users will find the ImageReady interface familiar



Changes to graphics can be compared and previewed instantly in ImageReady's powerful LiveView Window feature which updates file size and download times as the settings change. This is great for designers trading file sizes off against image quality.

Image Ready also comes with some useful adjustments for fine-tuning the gamma (brightness) to compensate for the differences between Macs and PCs (Mac displays are generally lighter), and for checking how your multi-coloured masterpiece will look dithered onto a lowly 256 colour display – often an unpleasant surprise. To control nasty, dither-tastic effects, individual colours can be selected and mapped to the nearest Web-safe colour, or you can lock the colours that are displaying well and map the rest to the Web-safe palette.

ImageReady can slice images up along guidelines, optimise them, then reassemble them in a browser, producing the HTML code on the fly. Great for knocking out graphics before the pubs shut.

But it's not all good news. The bundled client-side image map generator is a clunky affair that forces you to use different sections on separate layers. And if you want to get some groovy JavaScript rollovers on the go, look elsewhere.

There's nothing in ImageReady you can't accomplish with other programs, but offering all these features together in a Photoshop-compatible environment makes for an irresistible offering. As a one-stop Web optimising package it excels, and designers will appreciate its powerful and comprehensive file size and colour management tools.

At £79, this is a package that's within the reach of most working and aspiring Web designers, and should be a valuable asset for producing fast loading and good-looking graphics for the Web. Load it up and kiss those clunky, dithered, bandwidth-bustin', visitor repellin', heavyweight graphics goodbye.

Mike Slocombe

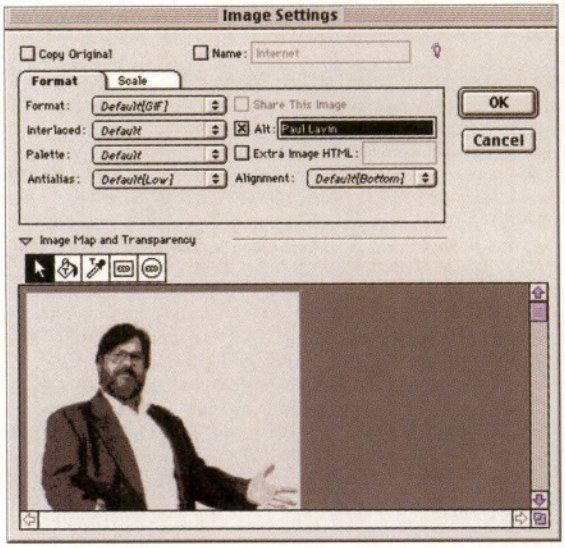
★★★★½

Image Ready 1.0

Price *£92.82*
Pros *Effortlessly optimises graphics for the Web, easy learning curve for Photoshop users, price*
Cons *Fiddly image map generator, no JavaScript rollovers*
Platforms *Mac, WIndows 95/98*
Phone *(0181) 606 4001*
www.adobe.co.uk

HTML CONVERTER

Beyond Press 4.0



The image editing tools are well above what you'd expect – and they really work

Promising Postscript to HTML is one thing, delivering it is something else

Beyond Press has always been about converting Quark pages straight to HTML without the need for a pesky Web editor. Versions one to three started badly and got slightly better, but never set the world on fire. Enter Extensis to take over from Astrobyte, and a whole new version of the program is born with support for dynamic HTML and enhanced image editing features.

Once installed, Beyond Press appears as a number of options within Quark Xpress. The conversion process is all done from a familiar set of menus. The big change in this version is the adoption of Dynamic HTML to allow pixel placement of objects, be they text or images.

Even DHTML pages will need to be worked over once they've been converted, but Beyond Press has been updated to allow a reasonable degree of HTML editing, as well as limited site management. The inclusion of PhotoAnimator also lets you create animated GIFs from your image selection. Image support has been enhanced and JPEGs, progressive JPEGS and interlaced GIFs are now catered for.

Once Beyond Press has converted your pages, you then work on them in Quark, making life easier for layout people who might be less than familiar with the workings of HTML editors. So, for example, you can attach HTML attributes to any objects within a Quark file ready for export.

So does Beyond Press work? The answer is yes, and better than before, but pages still need some work, and despite the tools on offer, a decent HTML editor can do so much more. I tried reworking pages from *Internet Magazine* for the Web site, and the results weren't too bad, but to create quick-loading HTML pages and optimised images, I still had to resort to outside help. For simple Quark pages without the heavy hand of design, this is the best and quickest tool on offer. But if the pages in question have been worked over — like the pages in this magazine, for example — you need to break the pages down to their component objects to achieve anything resembling the original.

Mike Hales

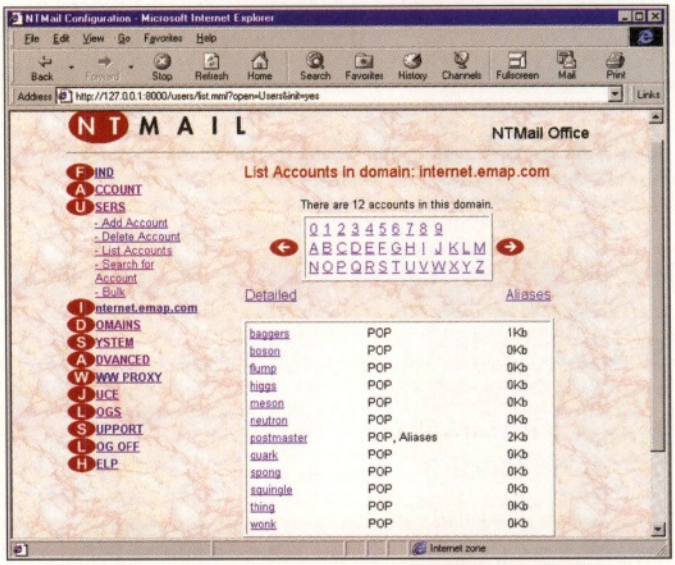
★★★☆☆

Beyond Press 4.0

Price *$499 (£310); upgrades £90*
Pros *Good HTML and image tools, familiar interface, fast processing, excellent integration with Quark*
Cons *Even DHTML isn't as sophisticated as Postscript, HTML pages still need to be optimised for the Web*
Platforms *Mac OS, Windows 95/98/NT*
Contact *Extensis Corporation*
Phone *(31 30) 247 5050*
www.extensis.com

EMAIL MANAGER

NT Mail 4.0



You can administer the NT Mail server from a Web browser. You can even add or delete accounts

The latest version of this popular mail server software continues to improve

As well as supporting the collection of email over leased lines, this new version of NT Mail now has support for dialling into an ISP to collect mail. You can set NT Mail to collect the mail from your ISP every half hour or so, and users can pick the mail up from the NT Mail server without having to connect to the Internet. There's also better integration with the NT User administrator system, which means that every time you create a new user on the system, NT Mail automatically creates an email account for them. You also get support for Internet Mail Access Protocol 4 (IMAP), a new and more flexible standard for sending and receiving mail. There's also a Web proxy system that automatically connects to the Internet over ISDN or modem whenever someone requests a page that's not in the cache.

Previous versions of NT Mail were administered through an NT control panel, but we've now got an easier to use Web-based interface. One nice feature is the ability to create new accounts in bulk simply by entering them into a Web page as a list of user names and passwords. This makes the process of creating users from another source (such as a database) much easier.

The software is fairly undemanding on processor power. On a 166MHz Pentium, sending and receiving several hundred emails only took 15-20 per cent of the processor power. This means you might not need a dedicated mail server. However, bandwidth could be an issue, as a busy mail system can quickly eat up a significant chunk of your Net connection.

A valuable add-on to NT Mail is JUCE, a new anti-spam system. This works by monitoring several aspects of the server and blocking or discarding messages that could be spam. The standalone version of NT Mail includes several anti-spam options, but JUCE is much more sophisticated. It watches how users send and receive email and blocks any email that doesn't conform to the usual pattern of use.

Richard Baguley

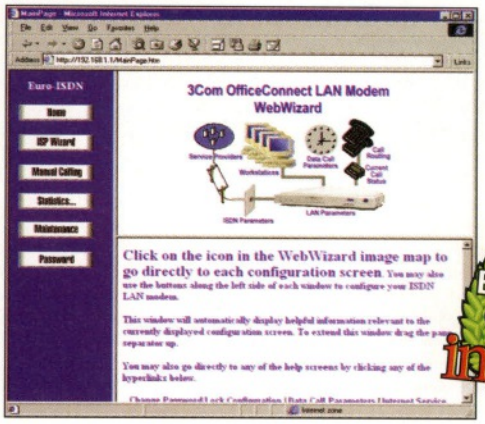
★★★★★

NT Mail 4.0

Price *£49 (developer – 5 users), £295 (office – 50 users), £895 (business – 250 users)*
Pros *Doesn't need a powerful machine, easily administered*
Cons *It's not cheap*
Contact *Internet Shopper*
Phone *(01275) 340 333*
www.ntmail.co.uk

PERSONAL ROUTER

Office Connect


Euro-ISDN
3Com OfficeConnect LAN Modem
WebWizard
Click on the icon in the WebWizard image map to go directly to each configuration screen.

The Office Connect is set up by running an easy to use Wizard program. The review model was up and running in under five minutes

3Com OfficeConnect ISDN LAN modem offers bargain-priced Internet access

Don't let its name fool you – this is no modem. It's one of the new breed of personal routers which are designed to give small networks and branch offices fast, transparent access to the head office intranet, or to the Internet itself.

The £300 OfficeConnect ISDN LAN Modem (OCLM) is aimed at the non-technical user, who perhaps runs a small business. The box includes a four-port 10Base-T hub, a pair of analogue phone sockets and a built-in ISDN router.

Most routers are tough to install, but that's not the case with OfficeConnect. We installed the review sample and had it up and running in less than five minutes flat, which is a personal record. Provided you have a browser installed, you don't need any additional software.

The OCLM is both a Dynamic Host Configuration Protocol (DHCP) and Web server – the workstation clients simply have to be configured to collect their IP address from the OCLM DHCP server. Next, you point your browser at the IP address of OCLM. Its built-in Web server, the WebWizard, kicks in and configuration is as easy as supplying your ISP's phone number, your user name and password.

The OCLM can look after 10 PCs. One of its niftier features lets you control Net access according to user profiles, so you can specify which users are permitted to access a certain service provider. For example, you might want to permit two of your users dial the corporate intranet direct, but two others only need to be given access to the Internet via your ISP.

The OCLM supports Network Address Translation (NAT). Not only does this let you use a low-cost ISP dial-up account, it also hides your local IP addresses from the outside world. NAT does this by mapping your local hidden IP addresses to a single IP address assigned by your ISP – so a £10 per month account will be sufficient for most small networks.

For a cheapie, the OCLM has some sophisticated features, including dial-on-demand, bandwidth-on-demand and Multilink PPP, where the sytem uses both ISDN channels to give up to 128Kbps of bandwidth.

Multilink PPP could potentially be a useful feature, if it wasn't for the fact that most UK ISPs don't offer 128Kbps ISDN connections, or not on ordinary dial-up accounts, at least.

I really liked the OfficeConnect ISDN LAN Modem, and it's the first time I've harboured such warm feelings about a router. Not only is it cheap and easy to install and use, but it works well, too. For the small branch office, the OfficeConnect is an excellent turnkey system.

Roger Gann

★★★★★

3Com ISDN LAN Modem

Price *£300*
Pros *Easy installation, cheap*
Cons *Limited reporting and management*
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Phone *(01344) 486 000*
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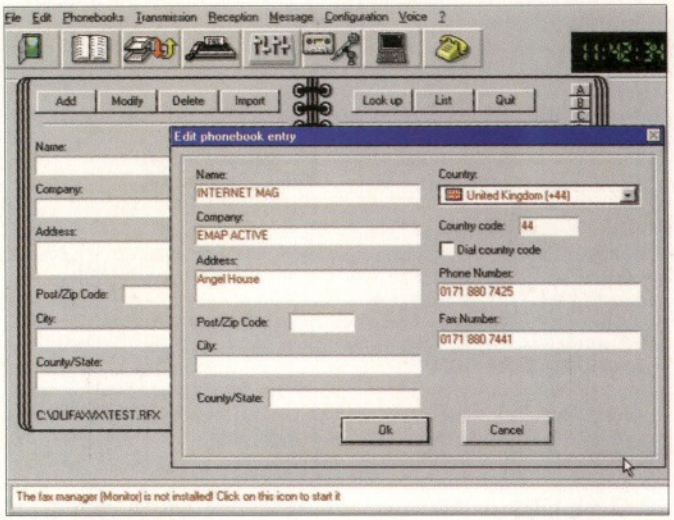


The software included with the Olitec modem is adequate, but hardly outstanding

Combined 56K modem, fax and answering machine for under £170

This is another modem with several personalities – it's a fax machine, a modem, and an answering machine (even when your PC is switched off).

The Olitec is tiny, about the size of a cigarette packet, and even smaller than the remote control that comes with it. There are no controls on the modem itself – you manage it via software or the remote control unit. The latter lets you dial numbers and play messages without having to turn the computer on, but if you lose it behind the sofa, the modem can also be fully controlled through the PC with the bundled software.

The Olitec can also act as a speakerphone, but the results were disappointing – we got much better results using a microphone and earphone plugged into the sockets at the rear of the modem. The review unit supported the K56flex standard, but you can get a V.90 upgrade from the Olitec site. A word of caution here, though – unlike the Zoom modem reviewed on page 99, you can't have both V.90 and K56flex on the modem at the same time. Don't install the V.90 upgrade unless you're certain that your ISP has installed and tested V.90 – something which Olitec neglects to mention in the manual, on its Web site, or when you install the upgrade.

With the upgrade, the modem worked well with ISPs supporting V.90. We tested the Olitec with several ISPs and consistently achieved connection speeds of 42-46Kbps on a standard BT line. We couldn't get a connection faster than 33.6Kbps through our switchboard, though, which is more due to the telephone line than the modem – V.90 is sensitive to line noise and other devices on the line, so if you go through a switchboard, you rarely get the fastest speeds.

This is a good package, but it's let down in some areas. The manual is OK, but lacks detail – the 24 English-language pages cover four different models, leaving little specific information. The software is adequate – it does the job, but not much more.

Richard Baguley

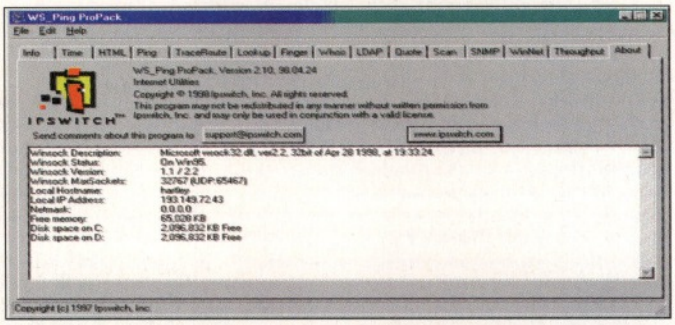
★★★☆☆

Olitec Self Memory Phone II 5600

Price *£169.95*
Pros *A good, compact package*
Cons *Software is a bit clumsy*
Contact *Eurotech (UK distributor)*
Phone *(0118) 981 0011*
www.olitec.com

NET UTILITIES

Ping ProPack 2.1


WS_Ping ProPack
File Edit Help
Info | Time | HTML | Ping | TraceRoute | Lookup | Finger | Whois | LDAP | Quote | Scan | SNMP | WinNet | Throughput | About
IPSWITCH
WS_Ping ProPack, Version 2.10, 98.04.24
Internet Utilities
Send comments about this program to support@ipswitch.com
www.ipswitch.com

You can find out all sorts of things you never knew before about your PC, your office network and the Internet in general using the selection of tools in the Ping ProPack

A collection of useful tools and utilities with a friendly face – strictly for Netheads

Hailing from the same wittily named company that brought you our award winning FTP package, WS_Ping Pro is an all purpose Internet utility that puts several useful diagnostic and information tools behind one easy to use front-end.

With a name reminiscent of an old Goons single, WS_Ping ProPack's smorgasbord of techie goodies includes Ping, TraceRoute, DNS Lookup, Finger, Whois, LDAP, SNMP and Scan tools. Hopefully, armed with this battalion of probes, you'll be able to analyse network problems and find information about users, hosts, and networks on the Internet or your intranet: Version 2.1 has been beefed up and you now get time-server synchronisation and throughput speed testing.

What's more WS_Ping ProPack can test Web addresses, synchronise your computer with a time server and test throughput on a connection. Light relief is also on offer – you can connect to a quote server to get your daily fix of wit – for example, 'Mobile Computing? Isn't that where you put a long extension cable on your T-1 so you can move around?' But that's enough levity. It runs under Windows 95 or Windows NT systems and can query any systems on a TCP/IP network, including PCs, Unix systems and routers.

The program is tiny, and installation takes just a few seconds. Load it up, and you get a tabbed dialog box, with each tool occupying a tab. You click on a tab and enter the parameters to be tested. It couldn't be simpler. For example, checking out 'Gann' on BigFoot's Lightweight Directory Access Protocol (LDAP), a quasi phone directory for the Internet, address book revealed hordes of Ganns in the US.

In all cases, previous target data is retained in pull-down lists, which makes revisiting sites simple, although it would have been nice to have the same site list available across all the tools. You can view the results in either a raw list form or in a tabulated report format.

There's a 30-day trial version of the product at **www.ipswitch.com**. Two of these tools, Ping and TraceRoute, come with Windows 9x, but they're command line/DOS utilities, which makes them awkward to use – WS_Ping ProPack undoubtedly makes these and other tools more friendly. You probably don't need this utility unless you love the nitty-gritty of the Internet – much of the data it returns will be of little interest to most Net users. But if you're a network administrator or run your own Web site, WS_Ping ProPack won't take long to earn its modest keep. And if you don't want to pay for it, there are plenty of public domain alternatives – check out the aptly named GeekToys, which does a similar, but less thorough, job.

Roger Gann

★★★☆☆

WS_Ping ProPack 2.1

Price *$37.50 (around £22)*
Pros *Comprehensive Net nitty-gritty*
Cons *Strictly for Net-heads*
Contact *IPSWITCH Inc/Unipalm*
Phone *(001) 781 676 5700/ (0638) 569 600*
www.ipswitch.com
www.unipalm.co.uk

Zoom 56K dualmode

This modem claims to simultaneously support the V.90 and K56flex standards

What's different about this modem is that it supports two 56K modes. Most modems (such as the Olitec reviewed on page 98) only have a limited amount of memory, so can only work with one 56K standard at a time – whichmeans if you upgrade the modem to V.90, you can't use K56flex any more. However, Zoom claims this modem has enough memory to hold the software for both the V.90 and K56flex standards.

There are lights on the front panel for Auto answer, fax mode and connection type – V.34 or 56K. Once in use, it rivals Blackpool illuminations

This certainly seems to work in practice – the modem was happy connecting to ISPs running both V.90 and K56flex standards. The modem automatically detects the appropriate standard to use.

Connection speeds were pretty good. Typically we got around 40-45Kbps with both V.90 and K56flex. The modem can also be forced to use one particular standard if necessary, with an AT command. You can even force the Zoom to pretend to be an older V.34 modem (with a maximum speed of 33.6Kbps). The modem has flash memory which can be upgraded by downloading software from the Web site, so if there are any problems with the software that controls the modem, it should be easy to fix.

The other distinguishing feature of this modem is the sheer number of lights on the front – 14 in total. As well as the usual ones (carrier detect, received data and so on), there are lights for Auto answer, Fax mode and two that show the type of connection – V.34 (33.6K) or 56K. When in use, it resembles a Christmas tree, with various lights flashing on and off to show the status of the modem.

The software bundled with the modem allows it to be used as a fax machine and answering machine, but the computer has to be turned on to receive messages – it can't do this when the PC is off. The Zoom uses the Communicate! Lite suite software, which is OK but not outstanding. There's also a selection of service provider accounts and other extras, including PaintShop Pro.

This is a nice modem, especially at this price. While it lacks some of the sophisticated features of modems such as the Olitec or the Pace Solo, it's good at what it does, and the ability to support two standards simultaneously is undoubtedly useful.

Many ISPs have yet to upgrade to V.90, but a modem like this would mean you could avoid this problem.

Richard Baguley

★★★★☆

Zoom 56K dualmode

Price *£89 (inc VAT)*
Pros *A good, solid, cheap modem*
Cons *Software is weak*
Contact *Zoom*
Phone *(01245) 352 403*
www.zoomtel.com

Internet names

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Expert help

If you've got a Net problem, email it to us and we'll field it to our distinguished panel of experts. From Web design to legal advice (and let's face it, that would normally cost a fortune) we can answer your questions. We'll also be picking the best reader's tip each month, so get them rolling in – the best one wins a fabulous 3Com Palm III

Readers' questions are answered by our panel of experts. Send your query to faq@internet.emap.com

Richard Baguley is our technical editor. He'll be answering your technical questions on everything from relational databases to digital signatures.

Mike Slocombe has designed sites for clients that include Snickers, Zenith Films, Direct Connection, NCR and Evolution. He also produces Urban 75, an irreverent online magazine. Mike will be answering all your Web design queries.

Roger Gann is a freelance computer journalist. He specialises in connection issues. If you're having trouble with dial-up networking or want to know why your 56K modem just isn't talking to your ISP, he's your man.

Michael Chissick is the head of Internet and IT law at Field Fisher Waterhouse, a city of London law firm with 50 partners. He'll be ruling on your legal problems.

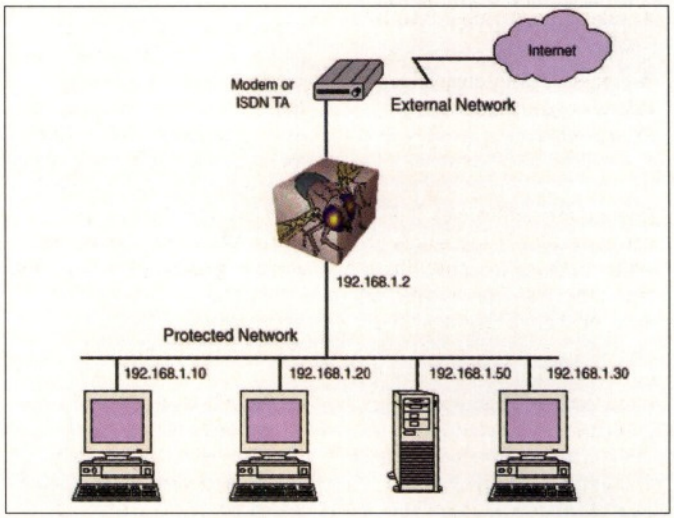
We regret that we cannot answer any queries other than those printed in the magazine.

Securing my network

Q Do you know of an Internet connection box which includes an ISDN router, firewall, and offers multi-user Web access?
John Mitchell
john_mitchell@hyperchannel.com

Richard Baguley replies: You're in luck John. There are several boxes that do the job you describe. Check out the 3Com Office Connect (reviewed on p97) and the Interlinx (reviewed in the September issue, p89).

All these include varying levels of firewall protection, although they're not usually as secure as a



Some firewalls (such as the GNAT Box) can be used as routers to connect a network to the Internet. See Securing my Network.

Top reader's tip wins 3Com Palm III

Good news for all those budding David Baileys who own a Casio QV digital camera. Using a handy piece of software, you can not only improve the quality of your photos, you can also use the Casio QV as a Web cam. Get yourself down to **www.beausoft.com** and download QV-Autocam. It's a great little shareware program with a built-in FTP client that lets you take still images and automatically uploads them to a Web site. *LJ*
TQuest@blueye.demon.co.uk

Thanks for the tip, LJ. You win yourself a Palm III. The Palm III organiser is a great little product. The interface is excellent, there's lots of memory to store personal information and the sleek new industrial design will impress your friends and colleagues. The 3Com organiser family comes with a comprehensive suite of personal information management (PIM) software, including date book, address book, to-do list, expense management software, calculator and note-taking applications and games. HotSync technology lets you synchronise data between the Palm III and your PC at the push of a button.
Get those tips rolling in now. Send them to faq@internet.emap.com, or you can send them to us through our Web site at www.internet-magazine.com

dedicated firewall. If you need a more secure solution, you could combine one of these units with a dedicated firewall such as the Interpol (**www.gomark.com**, reviewed in the July issue, p97).

Alternatively, some firewall systems such as the GNAT Box (**www.gnatbox.com**), can be used as ISDN routers. There's a free downloadable version of GNAT Box, GNAT Box Light, which is definitely worth trying out.

Delete those damn temp files

Q I have 207 temporary files piled up in my temp folder. Is it safe to delete them?
Peter Swales
xog87@dial.pipex.com

Roger Gann replies: Yes, it is. As you correctly say, these files, which all have the .TMP suffix, are temporary files. This means they have, or should have, a limited life-span. In your case they've outstayed their welcome and it's quite safe to delete them.

All the files in your TEMP folder (which is either **C:\temp** or **C:\windows \temp**) can be deleted. Many Windows programs such as Word and Excel typically create one or more temporary files while you're working on a document. These temp files should be deleted automatically when you quit that application, but if you don't exit your application in the normal way, because, maybe, your PC has hung, these files are stored on your system.

Do close down all your applications before zapping your temp files, though.

If you've got the Windows 95 Plus add-on, you can use the System Agent to run a batch file to delete these files at regular intervals.

Incidentally, Windows 98 comes with a utility, Disk Cleanup, which is perfect for this task. It can be scheduled to remove all manner of accumulated detritus from your hard disk – it's part of the Maintenance Wizard.

Legal loophole for Net tap?

Q Here's an excerpt from an article I found on a Web site dedicated to free speech, titled 'The police can read your email'. 'The Home Office has disclosed that the Data Protection Act allows police to legally read your email and to access personal details held by ISPs about you... The loophole has cropped up because the data protection and tapping laws were designed before the creation of the Internet.

'Also under the 1984 Police and Criminal Evidence Act, the police can force ISPs to hand over member's details. The National Criminal Intelligence Agency has meanwhile called for legislation giving the police more power to read your email, after a 10-month investigation where it found out that the Net was being used by top criminals.' Is this true?
Ken Harding
jeamac@globalnet.co.uk

Michael Chissick replies: There's no general constitutional or statutory right to privacy in the UK. However, some specific pieces of legislation do contain limited privacy provisions.

The Interception of Communications Act 1985 makes it an offence for any person who doesn't have express authority, under a warrant issued by the Secretary of State, to intercept any form of communication sent by post or the public telecoms systems. This means the police have to apply to the Secretary of State for permission to intercept emails. The Secretary of State may not issue a warrant unless he/she considers the warrant is necessary in the interests of national security, for the purpose of preventing or detecting serious crime or to safeguard the economic well-being of the UK.

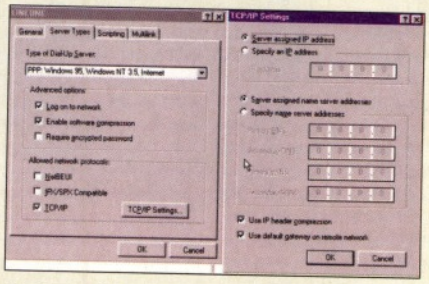
Anybody whose email is read by someone else without the proper permission may have a claim for trespass to property, nuisance, harassment, breach of confidence, and possibly breach of copyright.

Getting Windows 95/98 and your Net connection to play together nicely

Roger Gann and Richard Baguley solve the most common Windows 95/98 Net connection problems

1 There's loads of near-identical places in Windows 95 where I can enter my ISP's TCP/IP settings. Which one should I use?

It's true, there are too many areas in Windows 95 Networking crying out for this information. TCP/IP is so flexible that you can have different settings for your office network and separate settings for each ISP, hence the confusing number of places where you can enter these details.



The Network Control Panel is the definitive place to enter your TCP/IP setting

The bottom line is that you can ignore all the ones accessed via the Networking applet in Control Panel. Simply right click your ISP's Dial-Up Networking icon, select Properties and enter your ISP's TCP/IP settings here.

2 I've got a V.34/33.6Kbps modem. When I connect at full speed, Windows 95 reports that I've connected at 115Kbps. How can this be?

What Windows 95 is reporting is not your ISP connect speed, but the speed of the connection between your serial port and your modem. Which is less than useful. The problem is that there isn't much you can do about it. The speed reporting is determined by the modem's INF file. And for high-speed modems to be added to Microsoft's hardware compatibility list, it seems that the INF file needs this deliberate mis-reporting. Why did Microsoft insist on this? Possibly to avoid any confusion caused by the rapid influx of fast modems, first 28.8Kbps, then 33.6Kbps, then 56Kbps.

Mercifully, many V.90 modems now report their connect speed accurately, although this is of limited value. If you have to know your proper connection speed and you have a 3Com modem, add AT&F1 to the Extra Settings section of the Modem Control panel, or add W2 for other modems.

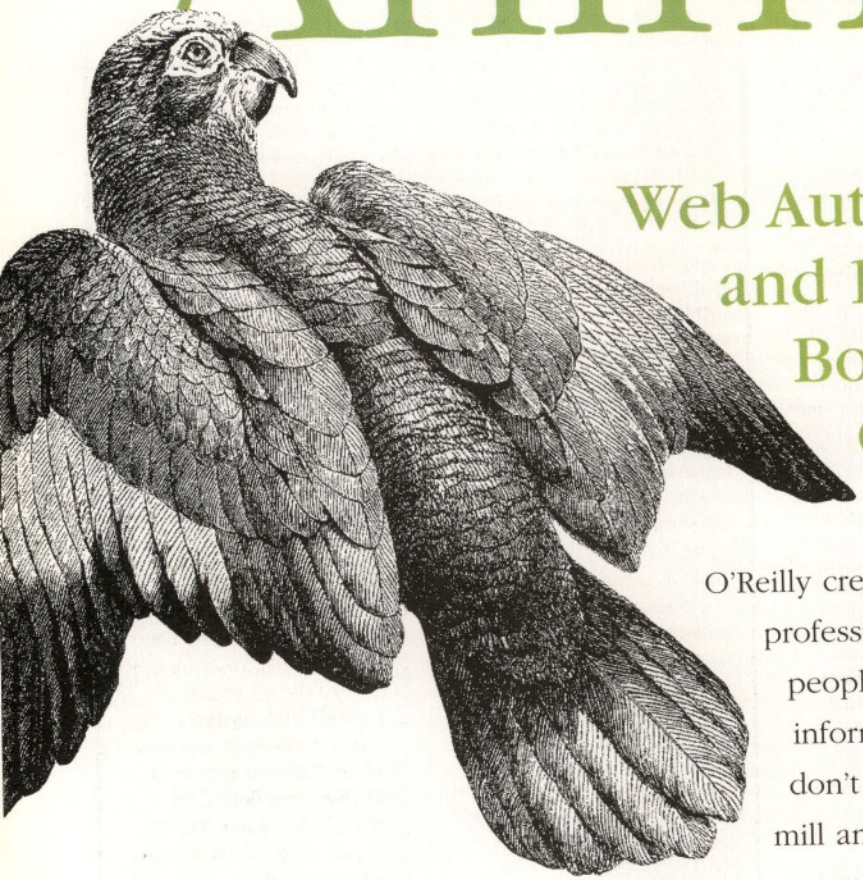
3 I've heard that Multi-link PPP (MLPP) connections are possible under Windows 95. How do I set this up?

MLPPP lets you combine two data connections to the Internet to form one, faster connection. It's often used with ISDN 2 to join its two 64Kbps channels to form one 128Kbps channel. It's possible to do this with analogue modems too. You'll need two modems and two phone lines and you'll also have to download the Dial-Up Networking 1.2 upgrade from Microsoft's Web site (**www. microsoft.com**).

If you've got Windows 98, this feature is installed. Right click your ISP's Dial-Up Networking icon, select Properties, then the Multilink tab. Click Use Additional Devices and use the Edit option to select the second modem or device.

But don't rush – your ISP has to support MLPPP for this to work, and ISPs that do this in the UK are as rare as hen's teeth.

A Different Kind of Animal



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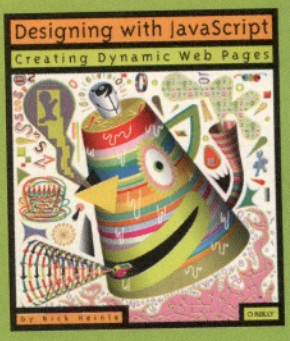

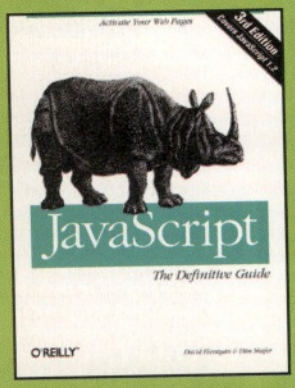

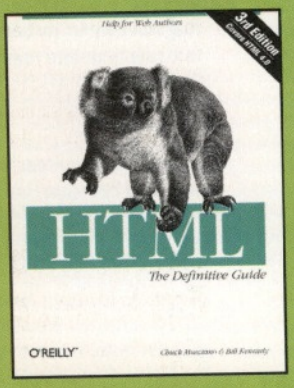

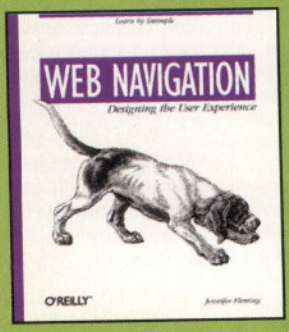

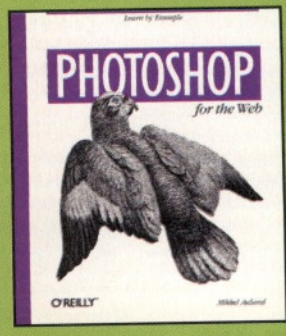

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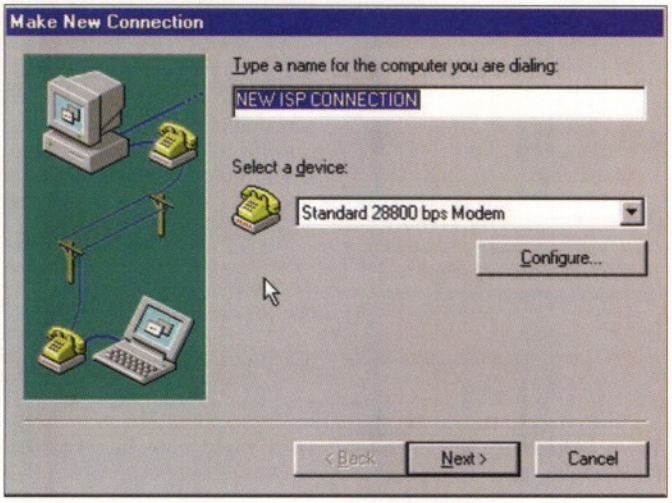


You don't have to install an ISP's software in order to access its service – see No Internet Explorer, please for details

You should also have a look at the cover feature of issue 39 of *Internet Magazine*, where we examined the terms and conditions of your contract with an ISP, and established exactly what they mean. Most of the ISPs we spoke to said they would hand over a user's email details only if the police had a court order compelling them to do so.

No Internet Explorer, please

Q I access the Net using Internet Explorer 3.02 and have been thinking about trying a different ISP to compare performance. All the ISPs I've contacted insist I install their browser software, many of which also use Internet Explorer 3. What will happen to my original version of IE3 if I install a second version of the browser? I'd rather just set up a new connection in Dial-Up Networking for my trial ISP and register my details online using my existing browser, rather than destroy all my original bookmarks and settings. Can I do this?

Russ Price

russ.price@bigfoot.com

Richard Baguley replies: In theory, when you try and install IE3 on top of another version of the software, it shouldn't overwrite your settings. However, some of our readers have had problems trying to do this. At least make sure you have a backup of your bookmarks file before you start.

Most ISPs will try to get you to use their software, but there's absolutely no reason why you can't just set up a direct connection to a new ISP using Dial-Up Networking. All you need to do is get the details from the ISP (including the telephone number, IP address and DNS server settings) and set it up yourself.

Just double-click on the Make New Connection icon in Dial-Up Networking (you'll find it under the Accessories section of the Start menu), enter the details as they're requested and you're away.

Double browser trouble

Q I want to install IE4 so I can use it as an alternative browser. Every time I try to install the software, I get a message telling me I need to close all other programs and start again. I've done this and still can't get IE to install. Have you got any idea what's causing this problem? I'm running a Gateway 133 Pentium with 32Mb of RAM. I've also got Netscape 4.5 beta version 1 installed.

Robert D. A. Janssen

rjan@netcomuk.co.uk

Roger Gann replies: This is a tricky one. The extent to which Internet Explorer 4.0 integrates with the Windows 95 operating system means there could be any number of complex reasons behind this error message.

If you really want to install IE 4, the least painful method is to start with a clean slate – reformat your hard disk, reinstall Windows 95 then install Internet Explorer 4 immediately. Don't forget to take a complete backup of all your data before doing this.

I recommend putting the software on a clean hard disk because, by installing over previous installations, you won't necessarily correct the fault that's preventing Internet Explorer from working properly.

Windows 95/98 and your Net connection

4 How can I make sure I'm getting the most out of my modem under Windows 95?

The first thing to do is scoot over to your modem maker's Web site and check if there are any updated INF files for your modem. If it's a recent model, you could also check for the latest firmware. Many V.34 modems are flash-upgradable, too. Use the INF file to make sure your modem is correctly installed, that is, not as a 'Standard Modem'. Open the Modem Control Panel applet and check the Properties of the modem – make sure its maximum speed is set to 115Kbps and in Advanced Properties make sure Hardware Flow Control is set on. Also make sure the Compress Data box is checked.

Finally, use one of the many public domain goodies (TweakDUN, for example) to take the TCP/IP Maximum Transfer Unit (MTU) setting from the default network-friendly setting of 1500, down to a more dial-up friendly setting.

5 Will buying the Windows 98 upgrade make my Internet access faster?

No. Windows 98 is really only an upgrade to Windows 95. Not much of the software that deals with getting online has changed, except for the addition of Internet Explorer 4 and a new system that allows you to set up the technical details of some ISPs automatically.

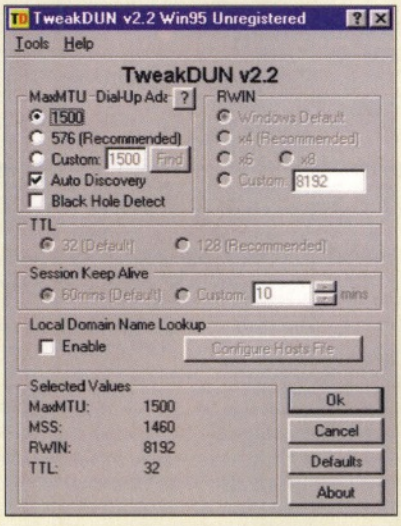
There's nothing in there that makes the speed at which you access the Internet any faster.

6 Why won't Internet Explorer remember the password I use to get access to the Web?

Windows 95 can cache network passwords. You enter a login name and password once and providing you opt to Save Password, it can be stored, then supplied automatically the next time you try to access that password-protected service.

The passwords are kept in encrypted form in a Password List File, which takes the form USERNAME.PWL. By default, password cacheing inserts your Windows Networking login name in the User name field of the Connect To dialog box. You then enter your password. If you connect successfully, the password will be remembered; if you don't, it isn't.

In this particular situation, you're checking the Save Password box, but the details aren't being saved. This could be due to a corrupted PWL file. One quick solution is to simply delete the old PWL file, or better still rename it *.OLD – you'll find it in your Windows folder. The next time you log in, a fresh password list will be created and your passwords will be added every time you log in to a service.



Tweakdun can be used to fine tune your Net connection, but use it with caution.

The truth about tags

Q I need help with my meta tags. I have a Web site at www.petch.mcmail.com/kleeneze/index.htm and have entered it

into many search engines, but when I do a search using the word kleeneze I keep getting the same pages and can never find mine. What's going on?
Ian Petch
ian.petch@mcmail.com

Mike Slocombe replies: Welcome to the mysterious world of the search engine. Each one seems to use a different way of indexing your site and some of the methods are impossible to work out. For example, some engines like alt tags, others don't. Some can't get enough of your meta tag information, while others laugh in the face of your carefully compiled keywords and descriptions. Some will race through your immaculately constructed framed site, indexing wildly, while some won't even sniff past the front door.

Part of the problem is that many of the search engines keep changing their criteria to stay ahead of ever enthusiastic spammers. What may have been tip of the week one minute, rapidly becomes the quickest way to get your site ignored forever the following week. For a while, ramming in the same keyword hundreds of times in the meta tags, or sneakily filling up your homepage with keywords in the same colour as the background was the way to rise to the top of the pile, but the search engines quickly wised up to that scam.

So how do you work your way through this minefield? First, it's vital to pick the strategic keywords for your site carefully and position them in crucial locations. Make sure you get them in your page title, page headline, meta tags and preferably in the first paragraphs of your page. If the text is in a table, it should ideally be placed in the top left-hand column.

Make sure your meta tag information is clear, concise and most of all, relevant. For a useful guide to meta tags go to **http://vancouver-webpages.com/META** or fill out the form at Meta Builder **http://vancouver-webpages.com/VWbot/mk-metas.html** to automatically create the code for your page.

If you're running a framed site, consider putting up a non-framed version of the site, or putting something useful up in the <no frames> area. Check out **http://searchenginewatch.internet.com/webmasters/frames.html** for a tutorial.

For sites which use image maps, use text links as well, or put up a site map with text links to everything on the site.

When you're submitting your site to search engines, put in two or three key pages – including the homepage – to prompt the search engines to shuffle your way.

Don't go berserk and embark on a page submitting frenzy, though, as some search engines will mark you down as a dastardly spammer and ban you.

In truth, getting your site noticed can be a tiresome process involving all sorts of tricks, but absolutely the most important thing is that your site has a theme and content. If there's nothing whatsoever of interest on your site, then it's hardly a great surprise if it's not getting indexed.

For further reading on the whys and wherefores of search engines, take a look at these useful resources, **www.atomor.demon.co.uk/search/index.htm** and **http://searchenginewatch.internet.com/webmasters/tips.html**

your META tags

The beginning of your HTML document (root page if using frames) should look like this (clip or save as TEXT):

```
<HTML>
<HEAD PROFILE="http://purl.org/metadata/dublin_core">
<TITLE>Internet Magazine</TITLE>
<LINK REV=made href="mailto:richardb@internet.emap.com">
<META NAME="keywords" CONTENT="Internet Net email WWW web ">
<META NAME="description" CONTENT="A journal of new technologies, particularly those relating to th
<META NAME="rating" CONTENT="General">
<META NAME="ROBOTS" CONTENT="ALL">
<META NAME="DC.Title" CONTENT="Internet Magazine">
<META NAME="DC.Creator" CONTENT="Richard Baguley">
<META NAME="DC.Description" CONTENT="A journal of new technologies, particularly those relating to
<META NAME="DC.Publisher" CONTENT="EMAP Active">
<!-- Metadata generated by http://vancouver-webpages.com/VWbot/mk-metas.html -->
</HEAD>
```

Note: Certain HTML editors mangle META elements; you may wish to use a simple editor like Notepad or vi to add these.

There are several sites available which can automatically generate meta tags for use on a Web page – see The truth about tags

Follow that site

Q Could you tell me what HTML to insert into a page to make it automatically redirect the browser to a different address (for example, so that http://members.xoom.com/outposting redirects to http://members.xoom.com/vipered
Ben Leavett
benleavett@pemail.net

Richard Baguley replies: Redirects are done by using a meta tag in the HTML which tells the browser to go to the new page. For your example, you would create a Web page at members.xoom.com/outposting that contained the meta tag

```
<META HTTP-EQUIV
  ="Refresh" CONTENT="0;
  URL=http://www.xoom
  .com/vipered">
```

With most recent browsers, it should automatically jump to the vipered page immediately after someone loads the outposting page. If you want the browser to pause, replace CONTENT="0, with CONTENT="10. This would pause for 10 seconds before jumping to the new page – to change the number of seconds for the pause, just alter the number.

For users whose browser doesn't understand the meta tags, put a normal link to the new page on the old one, along with an explanatory note. This means visitors can still jump to the new page by clicking on the link. im

Legal Brief: Misleading ads on the Net

The Internet is awash with adverts making exaggerated or misleading claims. Michael Chissick, partner in the law firm Field Fisher Waterhouse, explains what redress is open to you if you fall victim to such an ad

Internet adverts are no different from those in the press. They have to comply with the law and if inaccurate claims have been made in an ad, or if you've been misled into buying a product that clearly doesn't meet the promises made in the ad, there are remedies at hand.

All UK adverts have to comply with the British Codes of Advertising and Sales Promotion, as enforced by the Advertising Standards Authority, the industry's self-regulatory body. Advertising messages must be 'legal, honest and truthful'. There are also specific rules relating to products such as alcohol and tobacco and to adverts aimed at children.

If you have a complaint about an advert, the first step is to write to the ASA, stating the name of the advertiser, details of when and where the ad appeared and an explanation of why the advert is inaccurate. The ASA will investigate and, if necessary, ask the advertiser to justify its claims. If the advertiser is found to have breached the codes, it will be asked to amend or withdraw the offending advert.

In February, the ASA upheld a complaint made against Netbanx over its claim that Netbanx is a 'fully secure, instant debit and credit transaction clearance system'. The company was asked not to repeat the claim, because the words 'fully secure' implied that its security could not be breached and this had not been proved. You'll find details of all the ASA's investigations in its monthly reports at **www.asa.org.uk/adj.**

There's no legal obligation for an advertiser to comply with an ASA ruling, but if it doesn't comply it won't be able to book further advertising space. As the ultimate deterrent, however, flagrant and persistent abusers of the Codes can be subjected to legal proceedings by the Director General of Fair Trading.

Advertisers are also at risk of committing criminal offences. Giving out a misleading price in an ad is an offence under the Consumer Protection Act of 1987. The supplier of goods or services which clearly do not match the description given to them in an advert is in breach of the Trade Descriptions Act 1968. You can make a complaint to your local trading standards office, the officers will investigate the complaint and institute criminal proceedings if necessary. Unfortunately, this remedy is of little use is the supplier is based overseas.

Michael Chissick is Head of Internet law at the city law firm Field Fisher Waterhouse. Contact him at **Michael.Chissick@ffw.sprint.com**

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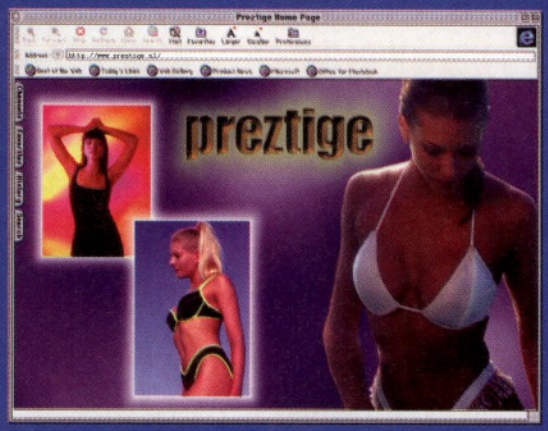

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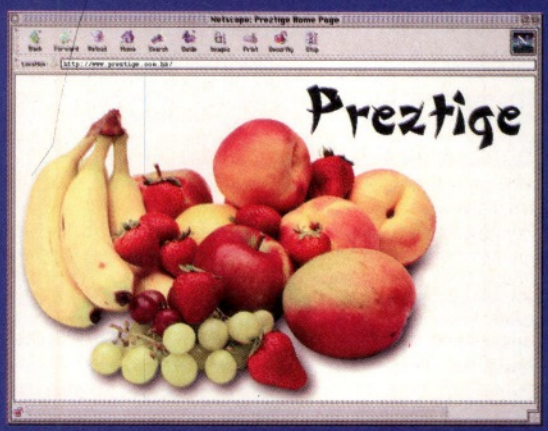

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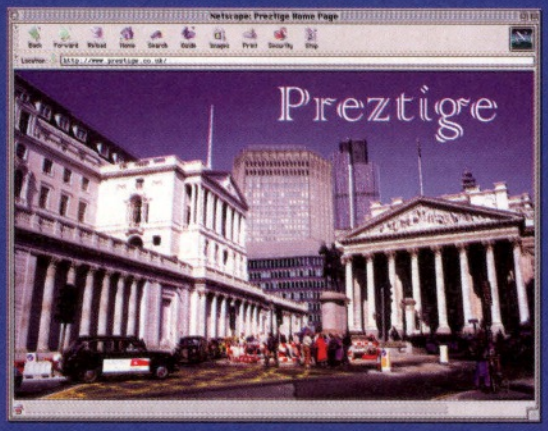

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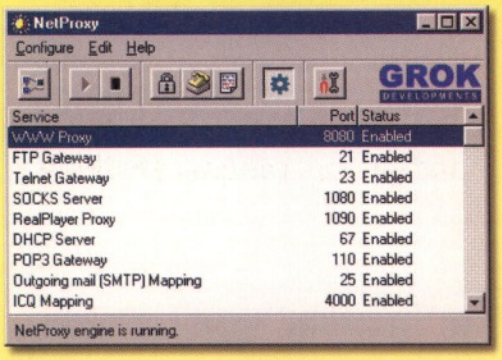

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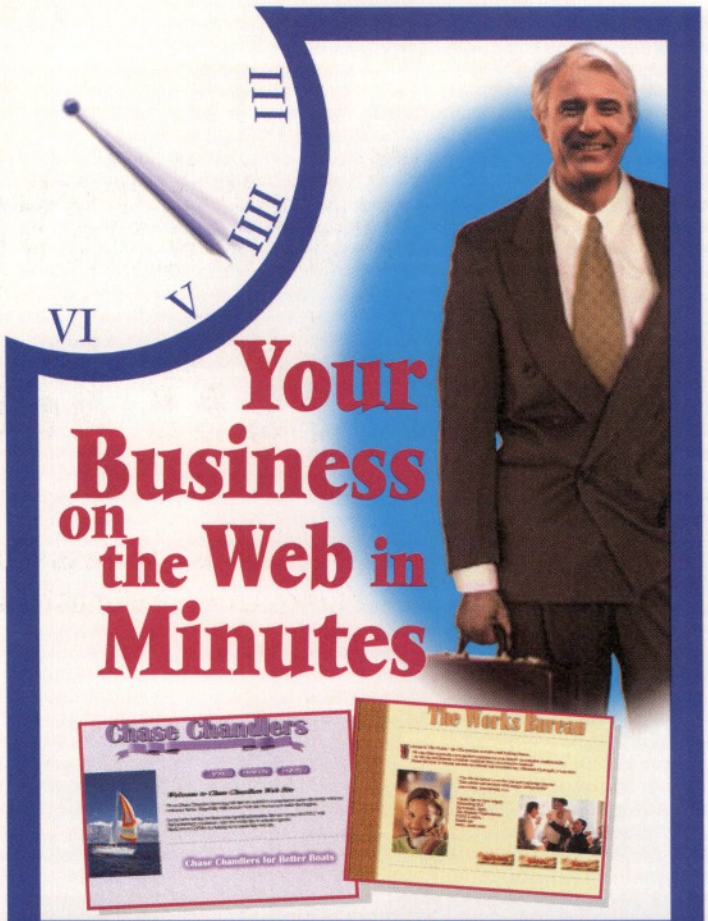

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Getting to grips with JavaScript

Tim Rafferty finds the class system flourishing in JavaScript as he wrestles with object hierarchies, but master this black art and you can conquer anything

First of all, you have my sympathies. Something has clearly gone wrong in your life. Perhaps, when you were younger you dreamt of glory. Remember those days in the playground. "I'm gonna be a twain dwiver," said little Johnny. "Well, I'm gonna be a solis, solic... lawyer," pronounced Samantha. And you declared, "I'm gonna understand object hierarchies using JavaScript." But nobody was listening, because you had no mates. Well, neither did I. So let's put two fingers up in the general direction of all those no-hopers and hunker down to some ironman coding.

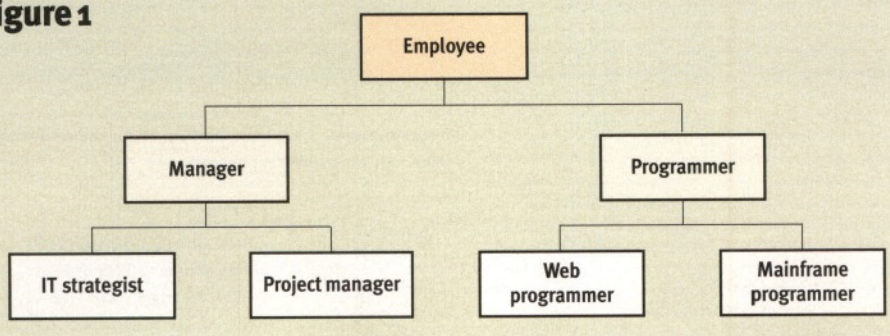
For most Web monkeys, the very idea of JavaScript programming is fuzzy. The problem is partly the name. Anything with script in its title immediately suggests 'Not real programming'. Which is a shame because client-side Web programming, although limited, does let you do some nifty tricks.

Last month, I went through the pros and cons of Web scripting in general, and here I'll take a look at how JavaScript treats objects. This piece, and the ones to follow, will set out the fundamental mechanisms behind different client-side programming tools, so you can decide which one best suits your purposes. JavaScript is the poor cousin of Java. Most people assume that JavaScript is some form of Java subset. It's not. It started life as a proprietary language, cooked up by the folks at Netscape as part of the company's LiveWire development suite. Only later did Sunsoft give it its blessing and re-christen it JavaScript. One reason why this history is relevant is because, at the time of its conception, programming languages were rushing into object technologies. So, while JavaScript evolved independently of Java, because it so closely followed the ideas behind objects, it ended up looking similar. These similarities are its big selling points, because rival development tools, such as Perl or Microsoft's VBScript, already had some pre-objects history and have been kicked around since to fit the object-oriented way of doing things.

Instant guide to objects

If you know zip about objects, here's a quick introduction. An object is a self-contained piece of code that hides the way it works. You ask it to do something, it does it and you neither know nor care how it does it. In theory, an object created in one language can be asked to perform its trick by any other language. To let you make such a call, an object publishes its properties and its methods.

Figure 1



What's more, objects can be grouped together in class hierarchies.

An example of a simple class hierarchy of employees inside a software house might look something like figure 1. But don't confuse a class hierarchy with, in this case, an organisational chart. Figure 1 doesn't mean that a project manager reports to a manager. It means that a project manager is a type of manager. Similarly, a manager, like a programmer, is a type of employee. Each class within the hierarchy lets the world know how it's defined (its properties) and what it can do (its methods). So every employee can share the same properties such as employee number, first name, date of joining the company and so on. They may also share common methods such as 'calculate net salary'. As you move down the hierarchy, specialisation leads to extra properties such as 'program language learnt' or 'Web server experience'. Similarly, new methods are introduced, such as 'deliver project plan'.

Passing down inheritance

With a class hierarchy in place, the final part of object technology becomes obvious. Inheritance means class definitions are passed down to all the classes below. So the definition of the Web programmer class wouldn't need to include an employee number because it would be inherited from the base class. Some languages support multiple inheritance, so a Web programmer could inherit some or all of the properties and methods of an IT strategist.

Finally, with a class hierarchy in place, you get a better definition of an object. An object is an instance of a particular class definition. So young Claudette Jones, the hotshot JavaScript wizard, is treated like an object, which she doesn't mind because she's just one

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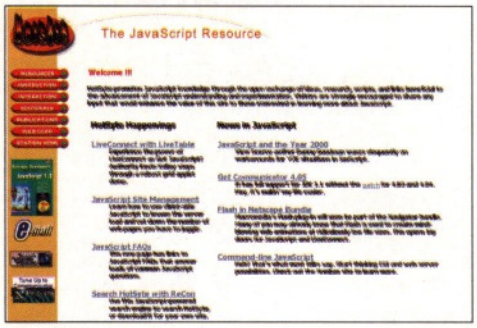


Top: For JavaScript tips, ideas and resources try www.serve.com/hotstyle
Bottom: And there are more useful scripts and tutorials at www.jsworld.com

instance of a Web programmer. To create Claudette in an object-oriented language, we instantiate a Web programmer class by using an encapsulated method already built within the class to construct a single Web programmer with some pre-set values for each property. Or, more commonly, we use a statement like...

```
new WebProgrammer
(10201786,31 Mar
1998,Claudette,Jones,Javascript,
Suitespot)
```

This is all fine and dandy, but how does it help you build better Web pages? For a start, you've got to get to grips with the basics before you can understand any of the Web scripting languages. Once you've done this, it's clear how the languages differ. Then, armed with a good understanding of how to handle objects, you can build better, tighter code and transfer code components between projects more easily.

Right, so you've set your brain to warp factor 9 and grappled with the metaphysics of class hierarchies. Er... JavaScript doesn't have class hierarchies. OK, calm down. Unless you understand what they are, you'll never understand how JavaScript implements objects.

JavaScript is a prototype-based language. Which means that rather than create objects as instances of classes, you simply define an object which acts as a prototype for objects of that type, or as a template for other objects derived from that prototype. It's a mind-bender if you take a classical object-oriented approach, but in its implementation, object prototyping is far simpler than class-based object construction.

Class differences

In theoretical terms, the differences between JavaScript and, say, Java are considerable. Ideas such as class instantiation and inheritance are fundamental to object-oriented programming. Object prototyping comes at the problems of object definition and creation from a different angle. However, and this is important, it can achieve the same aims, albeit in a crude way. So JavaScript can allow you to define objects, it does let you create object instances, and it can even simulate class.

The following code builds up part of the class hierarchy outlined above. Here's the base pseudo class:

```
function Employee () {
    this.empDept =
0;
    this.empNumber = "";
    this.empDateJoined = new
Date ();
    this.empFirstName = "";
    this.empLastName = "";
}
```

Here's one step down the hierarchy:

```
function Programmer () {
    this.empDept = 1;
    this.programming
    Language = [];
}
Programmer.prototype = new
    Employee;
```

And here's another step down:

```
function WebProgrammer () {
    this.webServer = [];
}
WebProgrammer.prototype = new
    Programmer;
```

If you've tinkered with JavaScript, you won't be surprised to discover you handle the creation of objects using functions. In some ways this makes life simple, as everything can be achieved by using functions, but purists may be upset by this approach, as in other languages a function does a clearly defined job of simply returning a value.

In JavaScript, the function is used both to define an object and to create a prototype of that object. It does so using the keyword 'this', which implies the creation of an object rather than the definition of a class. In a language like Java, you can create an instance of a class at the time of the class definition simply by including a method inside the class definition with the same name as the class. This 'constructor' method can then be used to set up default values for certain properties. In JavaScript, this two-step approach is combined in a single step.

Although the language doesn't hold the concept of a class, it helps to consider object definitions as what I've termed 'pseudo-classes' to distinguish them from objects. So, having defined a base pseudo-class of employees, it's easy to extend the hierarchy by introducing a child-pseudo-class of programmers. A function creates the programmer object and introduces another property, an array of programming languages which that person understands. This is easily achieved as every object has an implied property called 'prototype'. By making a statement such as:

```
ChildObject.prototype = new
ParentObject;
```

you're extending the definition of the ChildObject to include the definition of the ParentObject. The same technique is used to create a child-pseudo-class of programmers, Webprogrammers, which adds another property – an array containing the types of Web servers which that person has experienced.

While the boundaries of class definition and object instantiation have been blurred, so far the code has only set up the possibility of objects existing. All the same, we've started to put values of certain objects in place. You can probably surmise from the definition of an employee that every employee object will, by default, get today's date as the date when they joined the organisation. You can also see how other default values set in properties of parent objects can be overwritten with new values. For example, a department code of 1 is assigned to all programmers.

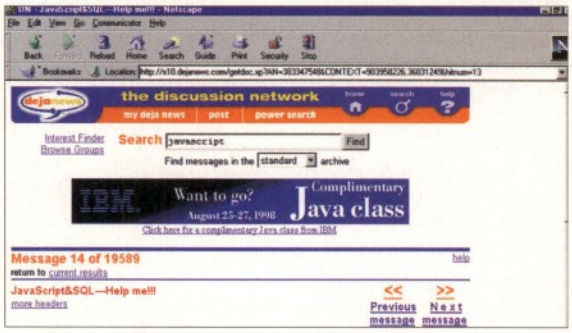
So, in effect, we've set up a class hierarchy. But how do we go about putting people into our organisation? It's simple – all we have to do is create a person and add values to the correct object properties to distinguish them inside our 'object model' (remember this term). Now create some people

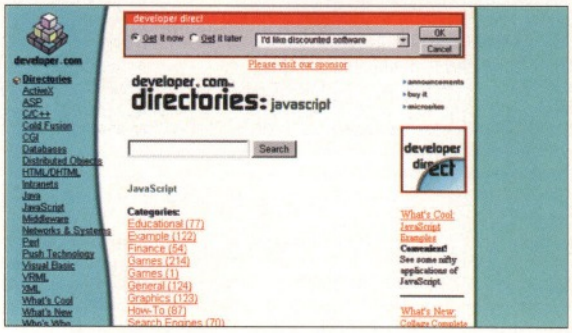
```
claudette = new Webprogrammer;
```

And give them some values

```
claudette.empNumber=857;
claudette.empFirstName="
    Claudette";
claudette.empLastname="Jones";
claudette.programmingLanguage[
    0] = "Javascript";
claudette.programmingLanguage
    [1] = "Java";
claudette.webServer[0] = "IIS";
claudette.webServer[0] =
    "Apache";
```

The idea behind creating the object is to give the object a name (in this case, Claudette) and state its type of object.





Top: Check out the comp.lang.javascript newsgroup. It's packed with people who can help with your JavaScript problems
Middle: Netscape has built a JavaScript Object Model
Bottom: The JavaScript directory is home to an array of code that shows just how flexible the script is

You'll notice that because we've already created a hierarchy by creating a Webprogrammer, JavaScript 'knows' where this object fits inside the object model. Having created our object, we then have to distinguish it from other objects by giving it some values. But remember, we don't have to give our object all the necessary values. For example, because Claudette is a Webprogrammer, that means she is a type of programmer, and that means she automatically gets department code 1 without us having to set that value explicitly. You'll also notice that the date Claudette joined the organisation will be set to today's date. If you go back to the employee object, you'll notice that the empDateJoined property gets its value by creating a new date object.

Think about that. It leads to two important conclusions. The first is that the JavaScript language itself is made up of in-built objects. The second is that any object can have properties, which are themselves objects. Now, before you say 'so what?', look at the bigger picture.

Once you start to realise that JavaScript is built up from objects, you can come to terms with the importance of a language's object model. Just like our hierarchy of people, JavaScript comes with its own hierarchy of objects, which helps define its scope. And to make life more interesting, you then discover that other bits of the Web come with their own object models, such as a browser. Yup, a browser like Navigator is nothing more than a collection of objects which you can work with as if you'd defined them yourself.

Are you listening carefully?

To confuse you further, Netscape has built a JavaScript Object Model, which includes all the objects you could deal with inside any browser. It has three base objects: window, navigator and screen. The window object has properties such as scrollbar and statusbar, plus methods such as open() or resizeBy(). The window also has an important child object called 'document' which has properties such as bgColor (sound familiar?) and that has a child object called 'form', which itself has properties such as 'button', which itself has a property called 'name'.

The reward for stumbling through this minefield is that you can now start to manipulate just about every bit of screen furniture that your visitors see when they link to your site. Get to grips with classes, hierarchies and objects, understand how JavaScript can meddle with these objects, and suddenly there's nothing you can't achieve. If, for example, you want to change the background colour of a Web page, it's easy – just add this bit of code as a SCRIPT to your HTML.

```
for (n=0; n<100; n++) {
window.document.bgColor="
    #CC0000";
window.document.bgColor="
    #FFFF66";
}
```

Not only will your page go bonkers as it cycles through red and yellow 100 times, you'll also have the satisfaction of knowing exactly what's happening. Which is simply that you're altering one property, the background colour, of a document object, which is a child object to the base window object. OK, so it sounds long-winded, but it sure impresses everyone else in the office. And if you can cycle the background colour of a document, you can mess around with any other property, such as buttons, scroll bars, or history lists. And if you can fool around with properties, you can also get to the methods within browsers such as blur() and focus(), which can activate or deactivate a particular form.

Unfortunately, there's a downside to all this. There's a base set of properties and methods which will apply to almost all browsers. Beyond that base set, you get into trouble, as different browsers have different object models. Specifications for each browser are available from their respective Web sites. But don't be glum, because if you've understood all the above, all you have to do is work out which browser you're using (which is itself a property such as navigator.appName), then find the appropriate name of the property or object from its object model.

Inside JavaScript

There's lots more you can do with objects inside JavaScript. You can be more elegant in how you create objects and set up their initial values. For example, it's possible to define a property called something like Inherited Properties, then set it to an object (and therefore its properties) further up the hierarchy.

Eventually, there is a limit to how practical JavaScript objects are in real-life situations. You may be struggling to imagine why you'd want to bother with JavaScript objects at all. Well, here's my parting shot for the sceptics.

Imagine an organisation where everyone had an employee number which indicated their role. So 10102857 might mean the person was a full-time employee, a programmer, and a specialist in Web development. Now imagine that the first thing an employee saw on hitting a particular URL was a custom-built page which not only gave them details specific to their individual position in the company, but also combined it with information for their specific role. It could go on to add information about their department and about other people in the organisation who do similar jobs. The whole thing could be patched together at the server, but it might prove difficult to co-ordinate all the possible pages and links. Using a JavaScript client-side program, the task could be carried out neatly. It could bring with it an object model of the organisation and just ask the user to enter their employee number to understand where that person was inside the company. It could then dynamically generate all the required HTML and browser objects appropriate to that person. I'd show how to do it, but unfortunately I've run out of space. So that's your homework for next month.

Tim Rafferty (timbo@internet.emap.com) is a freelance writer im

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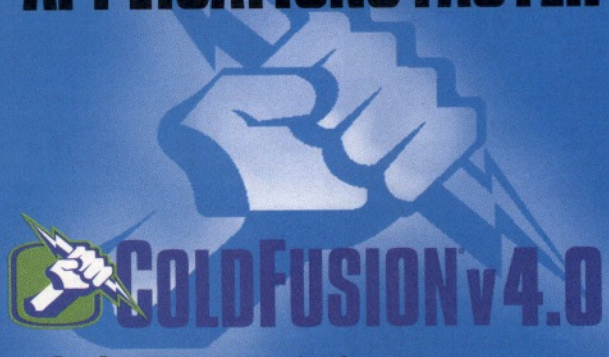

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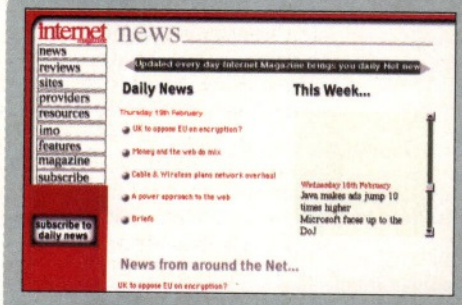

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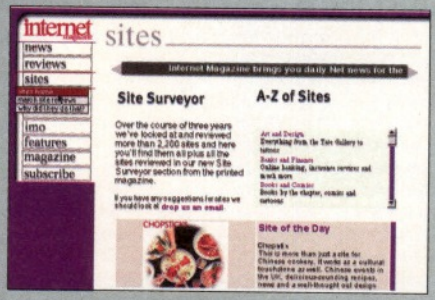

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Making your Web site work around the world

Your site might be out there for all the world to see, but who's looking at it? Unless you consider the needs of visitors from other countries, you could miss out on a lot of traffic... and business. Davey Winder explains

The Web is truly a global medium, shrinking the planet, breaking down barriers and creating an international community, not to mention sales opportunities. So why are most Web sites so relentlessly British? Many sites reflect the culture of whoever is behind their design, but that approach can restrict the site's success just as surely as not allowing for non frame-capable browsers or insisting that all visitors are Java-enabled.

What's the problem?

What are the kinds of localisation problems we're talking about here, and how could they affect your Web site?

Getting it right

Jason Finch (jason@port80.com) is a director of Web consultancy port:80, and has been involved at the sharp end of developing an international Internet strategy for the Toshiba Europe site (www.toshiba-europe.com). This is a good example of a big corporation that's got it right.

Finch told us, "There are two ways of giving a site the widest international appeal – either produce a single site that tries to overcome all the problems and is reasonably neutral, or develop individual sites for major geographic markets and hook them into some kind of umbrella site. Toshiba is in the process of launching different sites for countries throughout Europe, but each with the same visual identity and approach. We're translating core components of the site into different languages and hanging them all from the one site. Toshiba produces thousands of products, from memory chips to fax machines. In the UK it's best known for its computer products, but in Germany this is by no means their largest market – there Toshiba has a vast share of the photocopier and fax machine action. So the smaller sites that hang from the UK section focus on computers rather than photocopiers, but this would be nonsense to the Germans. A single site couldn't give the appropriate emphasis to different audiences."

TOSHIBA
Languages
Navigate
Products
Companies
News
Contact
Help
Novità! Web sito: Toshiba in Italia
New! Web pages launched: Toshiba Telecoms
New! Toshiba Medical Systems Year 2000 compliance
Welcome to Toshiba's integrated European website. Whatever you would like to know about Toshiba in Europe, you will be able to find it here.
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The Toshiba Europe umbrella site acts as a gateway to the company's European market sites

Toshiba's French site keeps branding and feel, but is resolutely Gallic in design

The UK site also retains branding and feel, but emphasises different products

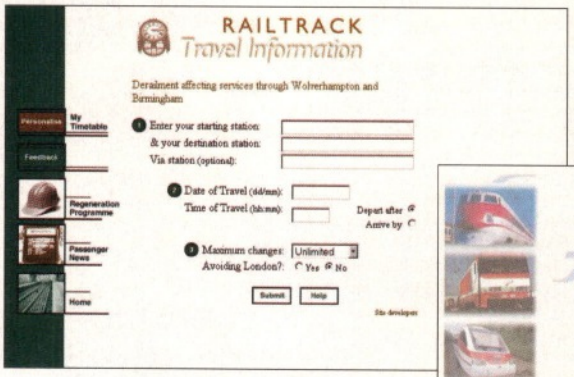
Toshiba's approach works particularly well. The Europe site acts as an umbrella, while sites for each country have a common branding, yet tailored content. As port:80 demonstrates so well, there's more to being international than offering a smattering of

If you don't take a truly international approach to marketing, sales and order dispatch, overseas visitors to your site won't be able to buy stuff from your site and you'll miss out on the full potential of a global market.

What's the point of an online brochure displaying your merchandise to the world if you don't have the administrative procedures to process overseas sales? How many times have you come across a really interesting site, found something you want to buy and then discovered, at the end of the order form, that sales outside the US or Canada are not supported? Maybe you're willing to export your goods, but don't get any sales because your online order form won't accept ZIP codes, or foreign character sets, or is too confusing for non-UK residents (Americans can be confused by the county field, for example). Some US sites are prime examples of this inflexibility, not letting you proceed with your order unless you enter a valid US state in the relevant field, even though you've selected UK and don't have a state to enter (other than one of sheer frustration).

An 0800 telephone number as the only point of human contact won't get you many sales enquiries from outside the UK, since you can't call an 0800 number from abroad. Similarly, UK and US short date formats are reversed, and you could run into all sorts of trouble if someone thinks an offer ending on 8/3/98 runs until 3 August.

Then there's the language barrier, and not just the straightforward 'no speaka da lingo' stuff, either. English-speaking visitors from non-UK English-speaking countries won't understand our colloquialisms. Heck, confusion can arise



RailTrack (left) offers timetables in any language as long as it's UK English...

...while its Italian counterpart (below) offers a full complement of European languages

between a Londoner and a Glaswegian, so what chance do visitors from the US, Japan, or anywhere outside the region where the slang originates, stand?

There's also a strong argument that not all Web sites need to be international. Take a good hard look at your prospective audience, who your visitors are likely to be, where they're likely to come from, and how geographically wide you'd like your customer base spread. You may discover that internationalisation would be a wise investment, and to ignore the global audience a surefire way to stifle your company's online expansion.

International design essentials

There's no shortage of advice on how best to create an online presence that's accessible to the widest audience. Carved in stone rules about making sure the site isn't browser-specific, either by brand or version, and avoiding the exclusive use of frames and Java are all well-known and accepted. Yet how many people bring the same common sense advice to internationalisation? When it comes to accessibility, the fewer barriers the better, and that includes geographic and cultural ones.

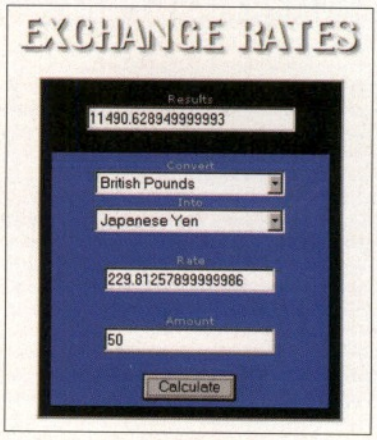
So you've determined that your site needs at least some international appeal, but when it comes to successful international trading on the Web, there are a whole host of design and implementation issues to consider. The first is language. You can offer different language options from your entrance page, so a visitor can select a more readable version of the site. If your only intended market is the English-speaking world, this would be overkill. However, you may still want to appear to be considering a wider audience, and could direct foreign visitors to an online translation service. Don't be xenophobic – remember that we are part of the European Union, where UK English is not the universal language. Accept emails in whatever language they may arrive, and invest in the services of an online translation bureau to decipher at least the gist of your correspondence. One example of different approaches national is railway timetables. The UK's RailTrack site (**www.railtrack.co.uk**) opts for the English-only approach, effectively denying all non-English visitors the use of a superb travel resource. Meanwhile, the Italian equivalent (**www.fs-on-line.com**) works in Italian, German, French, Spanish and English, providing the warmest welcome for foreign visitors.

Cultural differences

But internationalisation goes beyond language difficulties. What about cultural differences? Assuming knowledge on the part of your audience is always a dangerous thing. This applies as much to geographic and cultural knowledge as it does to language, slang and colloquialism. For example, the UK measurement system for clothes is a law unto itself. If you want to attract a wider audience, confusing them about sizes isn't a great idea. There's no need to run to a budget-consuming JavaScript-driven calculator, just list the European and US size equivalents alongside the UK ones in your online brochure.

Getting currency right

The same design logic applies to currency conversion. While it's not unreasonable to demand payment in pounds sterling, it's a poor show (not to mention an appalling marketing strategy) to expect your customers to pay without knowing exactly how much they're spending in their own currency. You may think currency conversion is the least of your worries, but you risk making a costly mistake. OK, so most transactions will be made by credit card, and the card company will handle the conversion at the going rate at the time of the transaction. But that's where the problem lies – they take the exchange rate at the time of processing the customer's transaction rather than when it's posted by you, the merchant. A simple, homemade conversion calculator can at best only a guideline to the rate used, and at worst leave you open to legal proceedings when the customer is billed for more. There are several currency conversion resources online. X-Rates (**www.x-rates.com/calculator.html**), for example, uses exchange rates updated daily at noon, and is free. If you do



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use a link to such a service, a clear legal disclaimer informing the customer that the final billing price may vary from this estimate due to fluctuations in the exchange rate would be a wise move.

Some of the biggest potential problems of a global site are simple to solve, yet easy to forget about until they happen, and then it's too late. Anticipate traffic flow from overseas, especially if you're expecting a lot of traffic from one country, such as the US. You can reduce the impact of such high-volume, country-specific traffic to the site by using mirror sites to ease the burden.

Embracing the world

Choosing which languages to offer has as much to do with Internet culture as with intended markets for your product. While the western world is still dominated by English and Spanish, the Net isn't. Research shows English is still dominant online (good news there, then), but is followed by Japanese, German, French and then Spanish. And only slightly behind in sixth place is Swedish. Once you've decided which languages to publish in, the next choice to make is how to offer the translation.

The most common approach is on English homepage that leads to other options by way of a mouse click, but you can be smarter than that. Paul Ockenden (**PaulO@cstnet.co.uk**) is technical director of the CST Group and has plenty of experience in designing global Web sites. "Many non-English visitors to the site will have set their browser up to request their particular language (yours is probably set to 'en-gb'). This setting lets the user select both the language and the particular localisation. You can detect this via a server variable. For example, if you're using Microsoft's Internet Information Server (IIS) you could have English, French and Japanese pages appear automatically (assuming you've built them in the first place, of course), by simply wrapping some ASP code around your default English page as follows...

```
<%
Select case
Ucase(Left(Request("HTTP
    _ACCEPT_LANGUAGE"
    ),2))
Case "FR"
response.redirect(http://
    www.mycorp.com/
    index-fr.html)
Case "JA"
response.redirect(http://
    www.mycorp.com/
    index-jp.html)
case Else %>
<HTML>
.
.
English Page
.
.
</HTML>
<% End Select %>
```

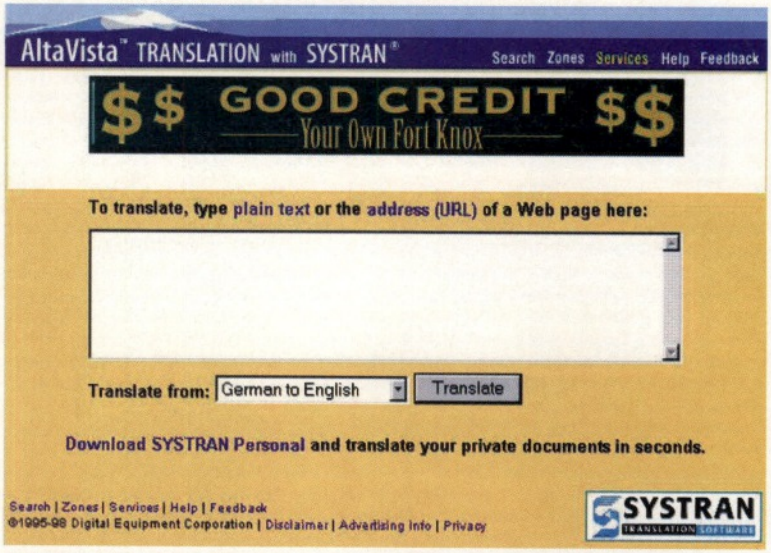
Now Japanese visitors will see their page without having to click on anything."

Be prepared to accept email enquiries in all languages – translation needn't cost a fortune. In fact, in many cases, it can be totally free. AltaVista's BabelFish (**http://babelfish.altavista.digital.com**) offers translation between European languages online. You can cut and paste directly off the Web page, or from your email, all free of charge. A quick visit to the Online Dictionaries and Translators site (**http://rivendel.com/~ric/resources/dictionary.html**) will point you in the direction of free online services, covering most languages.

Forms for all occasions

What about making your online forms as internationally accessible as possible? Don't underestimate the cost to your company if you get addressing information wrong. The results are lost sales, invoices that don't match customer records, having to send repeat orders because the first went to the wrong place, and other administrative headaches.

Sites can often fall down because, while they might offer the customer the choice of selecting UK from a country field list, they still demand thatyou enter a valid ZIP code. Use logic in the design of your address forms – force the customer to select a country first, then present them with a different set of available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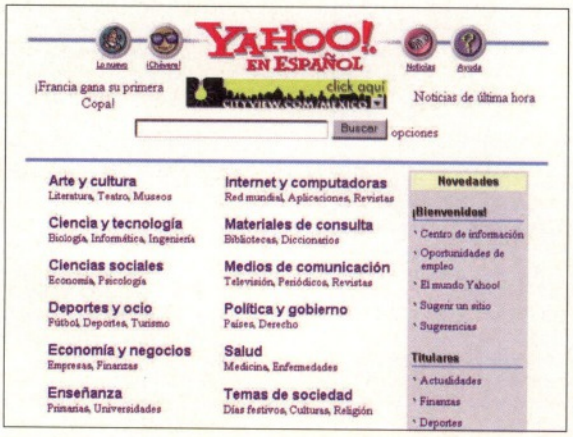

Yahoo En Español: one of the many language options from this truly international site

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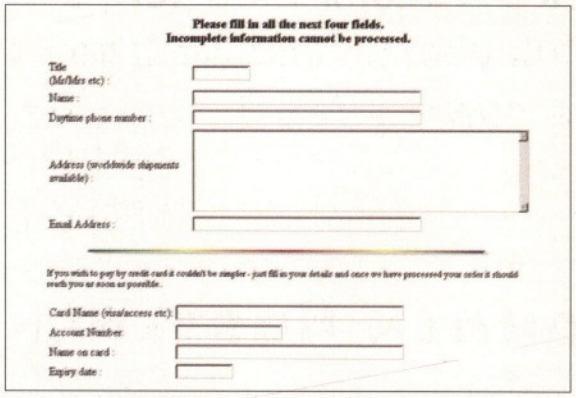

Please fill in all the next four fields.
Incomplete information cannot be processed.
Title (Mr/Mrs etc) :
Name :
Daytime phone number :
Address (worldwide shipments available) :
Email Address :
If you wish to pay by credit card it couldn't be simpler - just fill in your details and once we have processed your order it should reach you as soon as possible.
Card Name (visa/access etc) :
Account Number :
Name on card :
Expiry date :

It may be simple, but TeleShop has left the options open for just about any global address format. Watch those sales roll in

fields depending on their choice. Make sure you offer enough address lines – at least three, preferably four. The variation in phone codes is often forgotten, so telecom companies suggest you allow for up to 19 digits in this field to accommodate international dialling codes.

Don't impose too many database and form field validations. Sure, you can reject US entries that don't have their ZIP code and UK ones without a valid postcode, but if you go too far, some of your potential overseas customers may end up in a loop that they can't escape. Watch how you label fields. 'County' is fine for the UK, but overseas customers will wonder what's going on. Try options such as 'County, State or Region' instead. A little thought and some extra screen real estate will pay dividends with a greater number of successfully processed orders. The best global postcode and phone number format online resource is The Postal Codes and Address Format Links Page at **www.grcdi.nl/links.htm**.

Characters outside the standard 7-bit ASCII character set will regularly be rejected by company order-processing databases. Yet a number of languages use them, the obvious example being Japanese. While most modern browsers are capable of accepting foreign character sets, and online forms will accept them as valid entries, your behind the scenes database may junk them, and another order bites the dust. Talk to your database administrator and make sure it can accept foreign character sets or Unicode. If it can't, send the customer a rejection message letting them know why their order has been shredded. Probably the best resource online to aid your understanding of character sets comes direct from the Unicode Consortium at **www.unicode.org**.

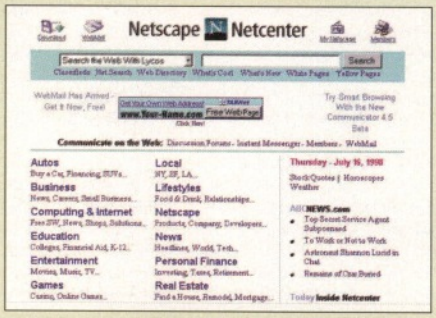
And, finally, never ignore the obvious. We asked freelance Web consultant and designer, Gary Fenton (**garygfx@cix.compulink.co.uk**), for his top three internationalisation tips. "Register a .com domain instead of a co.uk, otherwise many overseas visitors will simply assume your site is mostly for the benefit of people in merry old England. Some companies register both domains and point them at the same site. Provide all the relevant information about international delivery charges, and delivery times, if you're selling goods overseas. Quote prices including and excluding VAT. If you don't want to do business with folk overseas, let them know before they fill in the order form!"

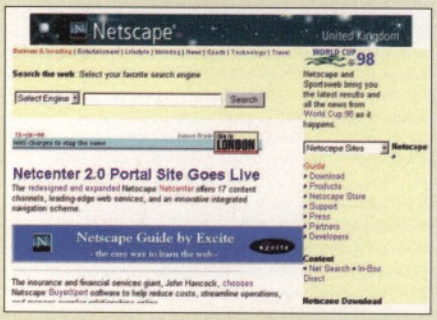
Davey Winder is an Internet consultant. A former Technology Journalist of the Year, he can be contacted by email at waveydavey@dial.pipex.com im

Getting it wrong

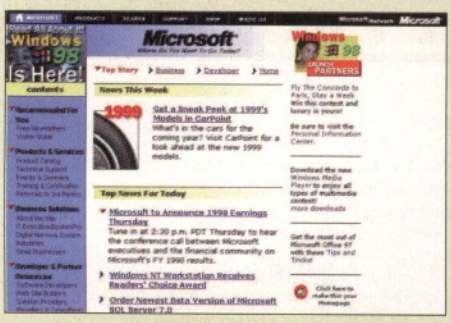
Netscape's Netcenter site (**http://home.netscape.com**) is far too Americanised, even down to the spelling. All the defaults are US, the culture with its talk of K-12 education and real estate is US-focused too. Hit the UK link, and at least the Netscape UK pages bring you UK newsfeeds, and UK corporate news about Netscape. Yet all the prices are still quoted in dollars, even where Netscape advertises the new International Store. Hit the marketplace link from the UK site, and you're not transported to the British Internet Bookshop, but to Amazon.com in the US instead. It's not all bad – if you choose the inconspicuous links under its Netscape banner, you do get UK content, courtesy of the Excite Guide service. The content here is pretty good, and it's all UK-relevant – so why did Netscape choose to make the navigation options so low-key?

Microsoft has also fallen behind in the internationalisation stakes, although it is improving. Enter Microsoft into your browser URL bar and you'll be taken to the main Microsoft US site. From here there's no obvious way to get to international versions of the site – no flags, no links, nothing. If you type in **www.microsoft.co.uk**, you'll be redirected to the UK pages that hang off the European site (**www.eu.microsoft.com/uk**). At least the information contained here is UK-specific, but there's not the same depth of information and resources as you get from the US page. Stop off at the European site, and you'll see it's exactly the same as the US one. Delve deeper on the UK pages, into the downloads area, and you'll find that available downloads come direct from the slow US servers, rather than from a UK mirror site. Make the mistake of registering your software on the US site, and you'll have to register again on the European one to access the same set of pages.



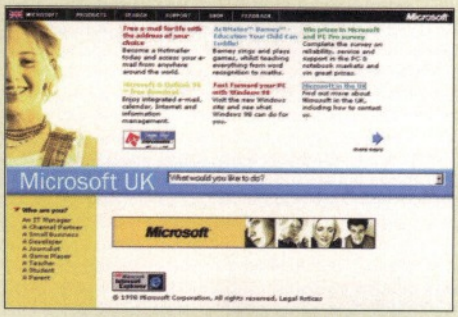


The Netscape NetCenter site is American through and through... and the UK Netscape site offers little obvious UK content. Here's a tip; you get there from those little links under the Netscape banner!



Where do you want to go today? Microsoft seems to think it's the US by default

Notice any similarity between the US and Europe Microsoft sites? Or should that be, do you notice any difference?



Once you do finally figure out how to get to the UK site, you'll find it a little less feature-packed than its American cousin

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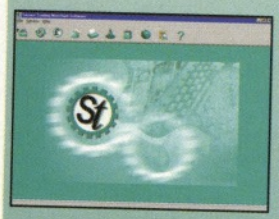

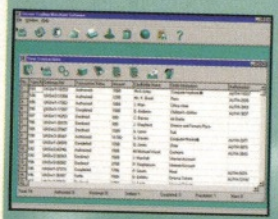

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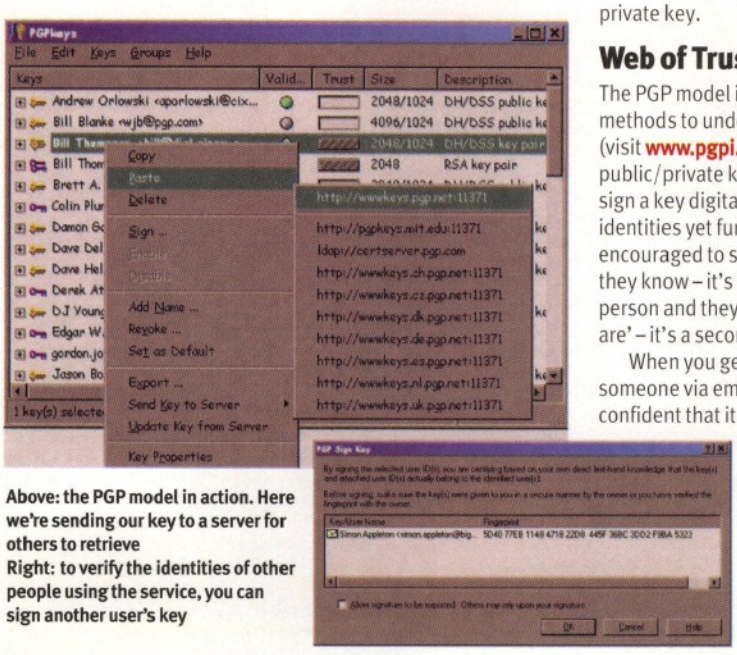
Proving your online identity

People take on different IDs on the Net. So how can you convince a Web site that you are who you say you are? Are digital certificates the answer? Bill Thompson looks at the ways to prove your online identity matches your real-world ID

It's becoming hugely important to identify yourself online, and you need to do it in a secure way. If you want to buy goods online, you'll need proof of ID (credit card, driving licence and so on). More importantly, you need to make sure somebody isn't out there pretending to be you and buying the entire contents of BarclaySquare in your name and with your money.



Above: the PGP model in action. Here we're sending our key to a server for others to retrieve
Right: to verify the identities of other people using the service, you can sign another user's key

As yet, there's no accepted solution to this problem, and there may never be a perfect way to prove your identity online. Although we can identify ourselves to our computers with passwords, fingerprints or iris scans, we have no foolproof way of connecting our real-world and online identities. There are two solutions at the moment – digital certificates (sometimes called digital IDs) or joining the PGP Web of Trust. Neither is perfect, but it's all we've got, so if you want to protect your ID, it's worth checking both of these out.

Both systems are based on one idea: your online identity is determined by a private encryption key, which you can use to digitally sign or encrypt documents. You give out a copy of the public key which matches the private key (see box on public keys below) – which you can only get with your private key. Somebody you trust then verifies you're the owner of that public key by digitally signing it with their private key.

Web of Trust

The PGP model is the easier of the two methods to understand. Every PGP user (visit **www.pgpi.com** to learn more) has a public/private key pair. PGP lets users sign a key digitally. To help prove identities yet further, PGP users are encouraged to sign the keys of people they know – it's like saying 'I know this person and they are who they say they are' – it's a second level of verification.

When you get a PGP public key from someone via email, you can then be confident that it belongs to the sender by looking at who's verified it. If it's been countersigned by someone you know, or by someone who you know someone knows, you're more likely to believe the ID.

The PGP model is great when it works – and for the moment it does. There are several keyservers which hold databases of keys, and any PGP user can store their public key there. There are even special services, including the wonderful PathServer (from AT&T at **www.research.att.com/~reiter/PathServer**), that will draw a graph of the connections between any two keys. And there's a vast community of millions of PGP users supporting a system of authentication based around taking responsibility for others.

Certificates

Although the PGP model works, it was not the model adopted by the commercial Internet world, which wants something much more rigid, something that will stand up in court.

The business model is based around Digital IDs, or certificates. As with PGP, a certificate is a copy of your public key which has been digitally signed, in this case using the private key of a well-known organisation (a large corporation like VeriSign or BT, or perhaps even ➤

How public keys work

Public key encryption is the best way of sharing secrets. Public key encryption uses two matched numbers – the keys – to encrypt and decrypt messages. A message encrypted using one of the keys turns into ciphertext that can only be decrypted using the second. Keep one of them secret (the private key) and tell your friends the other (the public key). And ask your friends for their public keys.

Now, if you want to send a secret message to Gordo, you encrypt it using his public key before you send it. It can only be decrypted using his private key – which only he knows – so only he can read it. If you want to sign a message to Gordo, then encrypt part of it using your private key and attach the signature to the message. The signed bit can only be decrypted using your public key, proving that your private key (which only you know) was used to sign it.

As long as the numbers (your key lengths) are big enough (1024 bits is good), then public key encryption is believed to be effectively uncrackable.

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Running a PKI

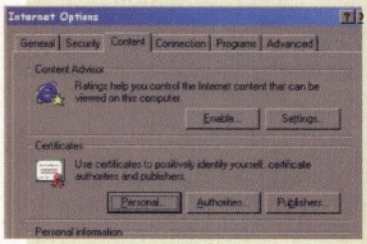
A public key infrastructure (PKI) is the software, standards and procedures that make a certificate work. Without a proper PKI, a certificate is just a personal agreement between two individuals. When properly used, a PKI can be used to control access to resources of all types. For example, a company could set up its own key servers to issue digital IDs to employees and then use these certificates to control access to network servers, printers, and even files.

In principle, any company could set itself up as a Certification Authority, as long as its users trusted it. After BT (TrustWise) and the Royal Mail, no doubt we'll others getting in on the act. There are a number of options for setting up a PKI. The best-known is probably VeriSign (**www.verisign.com**) part of RSA, since it was the first and managed to get its public CA key built into the first release of Netscape Navigator.

But there are alternatives. Entrust (**www.entrust.com**) offers a comprehensive system, used by the Royal Mail digital certificates. And then there's Zergo (**www.zergo.com**) which manages the CA used by the Government Secure Intranet – the network the UK Government uses to transfer data.

Your certificates

A certificate (also called a Digital ID) is a lot more complicated than a simple, signed, public key. The internationally agreed standard for certificates (X.509.v3) includes the name of the certificate issuer, the public key of the subject (that's you), a period of validity and a digital signature. It can also include additional fields defined by the certificate issuer – these can store extra information such as email addresses, gender, age and other useful bits of data.

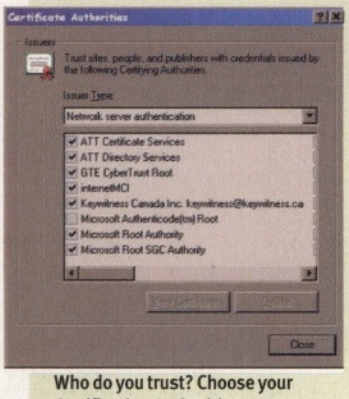


Managing Certificates in IE

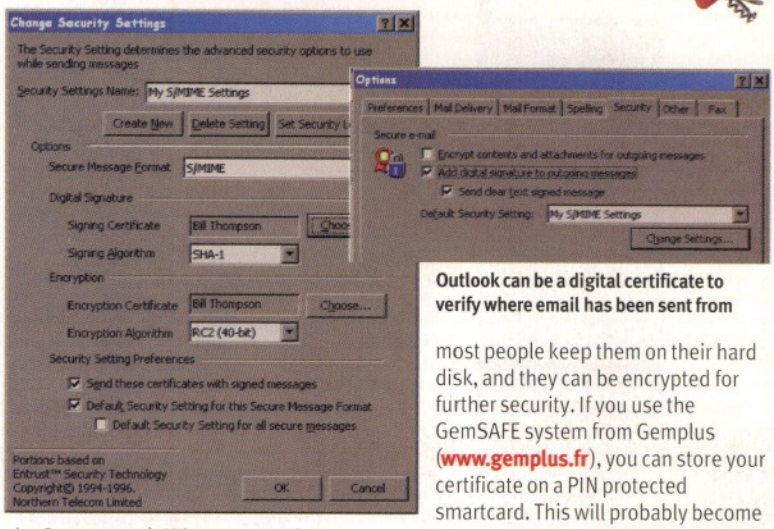
Using IE 4, you can manage your certificates from the Content Tab in the Internet Options control panel (accessible from the View menu). In Navigator it's in Security Information (under the Communicator menu)

There are three types of certificate: personal, authorities and publisher (or Yours, People, and Web Sites & Signers in Navigator). Personal certificates are those issued to you by a CA. Authorities lists the CAs you trust – only certificates issued by these CAs will be accepted by your browser. If you try to access any secure pages which have been certified by another CA, IE won't let you. If you're using Navigator, you have the option to override the warning

Publisher Certificates give you a list of the Authenticode certificates you've accepted as valid – code signed by one of these publishers will install itself without asking your permission.



Who do you trust? Choose your Certification Authorities



Outlook can be a digital certificate to verify where email has been sent from

the Government). Whoever gets that signed public key can use it with confidence because they trust the signing organisation.

The signing body is a Certification Authority (CA), and the big difference between the PGP model and the Certification model is that the CA is expected to assume some legal responsibility for the certificates it issues. If you decide to sign a stranger's PGP key, you're not responsible for any fraud committed with that key. If a CA gives you a certificate and you use to steal something, then they may be liable. CAs work hard to make sure they manage things properly, building what's called a Public Key Infrastructure (PKI) to issue and manage certificates. They have to verify the identity of people or organisations requesting certificates, deal with requests to cancel certificates, renew certificates, and keep a lot of secrets for a lot of people (see box on PKI for more information).

How sure are you?

The CA is the guarantor of your online identity. Companies like VeriSign issue two classes of certificate. A Class 1 certificate contains a name and email address, and all it really guarantees is that the email address is valid and someone has claimed that their name is associated with that email address.

For a Class 2 certificate, VeriSign will check with Equifax, the US credit reference agency. At the moment, these certificates are only available to US citizens, and cost $19.95 a year. Even then, the check only shows that someone of that name exists – it doesn't tie an email address to an individual. But for the moment this is as good as it gets. VeriSign also offers commercial certificates that can be installed on Web servers (to provide encrypted transactions) or used to sign code (using Microsoft's Authenticode), and these are more carefully vetted.

How to use certificates

Certificates are issued by the CA and stored locally by the user. At the moment most people keep them on their hard disk, and they can be encrypted for further security. If you use the GemSAFE system from Gemplus (**www.gemplus.fr**), you can store your certificate on a PIN protected smartcard. This will probably become more common as people become increasingly reliant on their digital identities. Once you've got one, your certificate is used to identify you to compatible Web sites. They can also be used by your email client to sign or encrypt email using the S/MIME standard (more about this next month). Certificates can also be used by cryptographically-enabled Web servers to verify the identity of site visitors, as an alternative to cookies or passwords.

Getting a Trustwise Certificate

There are lots of certificates and CAs. In the UK, BT has recently launched Trustwise, in association with VeriSign. The Class 1 ID holds just your name and email address, but it's only a 60-day trial version and the details, other than email address, are not verified.

To get this free Trustwise Personal ID, go to their Web site (**www.trustwise.com**) and select Personal Digital ID. Fill in your name and email address. They then email you the details of how to pick up your certificate. This is the only bit of validation that the CA does for a Class 1 certificate. As well as your name, you can add extra information to the certificate, including your country of residence, date of birth, gender and postcode. But since it's not clear how this information will be used by sites you connect to, you might prefer to keep it simple.

Finally, enter a pass phrase – this will be used as your password if you want to change your certificate in future. You shouldn't use a pass phrase from any other service or system – and especially not your PGP pass phrase. You also get to set the security level of your private key. Remember, your certificate encloses your public key, which is sent to people and Web sites on demand. Your private key is stored on your hard disk, so it could be revealed if someone steals your machine.

There are three security levels:

1 No security: the key is used on demand. If someone steals or uses your computer they have access to it.

2 Medium security: you're told when your key is being used.

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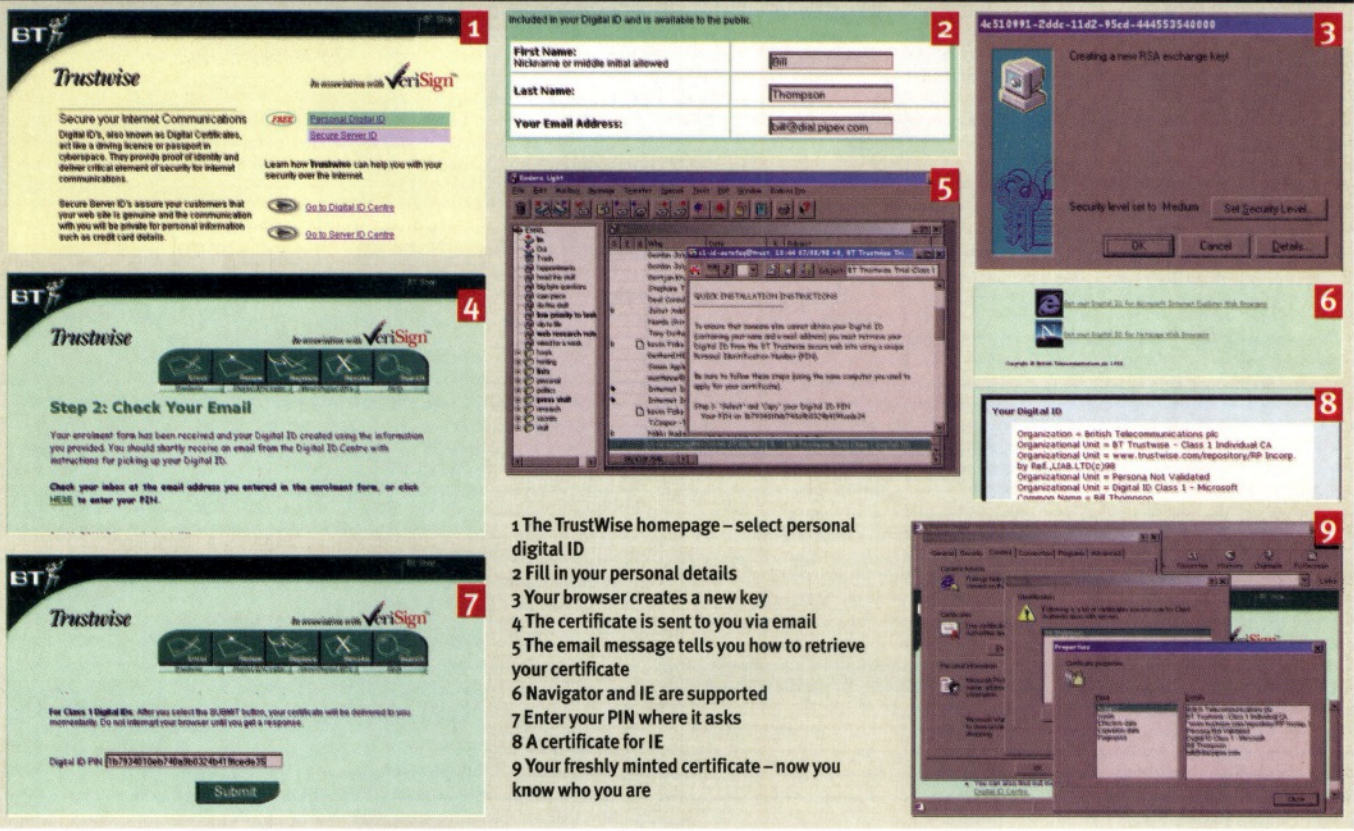

1 The TrustWise homepage – select personal digital ID
2 Fill in your personal details
3 Your browser creates a new key
4 The certificate is sent to you via email
5 The email message tells you how to retrieve your certificate
6 Navigator and IE are supported
7 Enter your PIN where it asks
8 A certificate for IE
9 Your freshly minted certificate – now you know who you are

3 High security: your key is encrypted and you need to enter a password every time it's used.

You should choose Medium security, which lets you know when your key is being used. If you get a Class 2 certificate, you'll need to raise the protection level.

Finally, you click to get the certificate. This tells your computer to generate a public/private key pair, save the private key for you and use it to sign the public part, which is sent to the CA. The CA signs it and returns it to you by email.

Once you've got the PIN from the CA, go to the Web address indicated on the email and enter it into the form. The CA will then deliver the certificate to you, which you need to install it so it can be used by your applications – including your browser. After that, return to the Personal Certificates list and you'll see your new certificate in all its glory.

Identity crisis

The trouble, is neither certificates nor the PGP Web of Trust solve the identity problem. Having a digital ID doesn't guarantee your security on the Net. For one thing, the public/private key pair is not a whole lot of use if it's restricted to US export-grade encryption levels. And the latest UK versions of IE and Navigator are both restricted in this way.

Even with a proper certificate (such as one from Zergo – **www.zergo.com** – which offers military-grade encryption in the UK) or a signed PGP key, things are far from straightforward. All a digital signature on a public key proves is that a person or program has access to a specific private key that matches the signed public key. Identification means a lot more in the real world. Even if the CA goes to extreme lengths to verify someone's identity before signing their public key, if the private key is later compromised, the certificate is too.

Where next

Certificates are not yet recognised as binding under English law, but this may change if the DTI's proposals for licensing Trusted Third Parties (its term for CAs) pass into legislation.

There's also a move in Europe and the US to legally recognise digital signatures. But certificates are not perfect, and private keys are not always kept secret. For now, it's worth getting used to using certificates, so that when they do become a serious requirement you'll know how they work. However, the publicly-available certificates from TrustWise and the like should not be treated as any guarantee of online integrity. im

Bill Thompson is a freelance journalist specialising in the Internet. Contact him at bill@dial.pipex.com

Where to go from here

Get your trial BT certificate from **www.trustwise.com**
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Entrust **www.entrust.com**
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For the politics of the situation in the UK, try the DTI paper at **www.dti.gov.uk/pubs** and Demon's response at **www.demon.net/news/features/crypto**

Coming up...

We'll be following up this series with...
- **Keeping secrets:** encryption and verification
- **Safe shopping:** paying securely and keeping out of marketing databases
- **Why do you want to know?** privacy policies on the Internet

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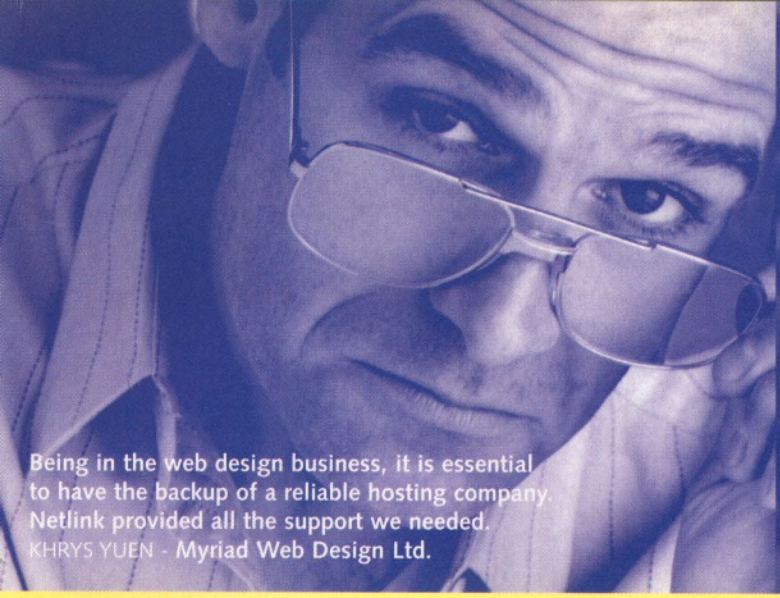

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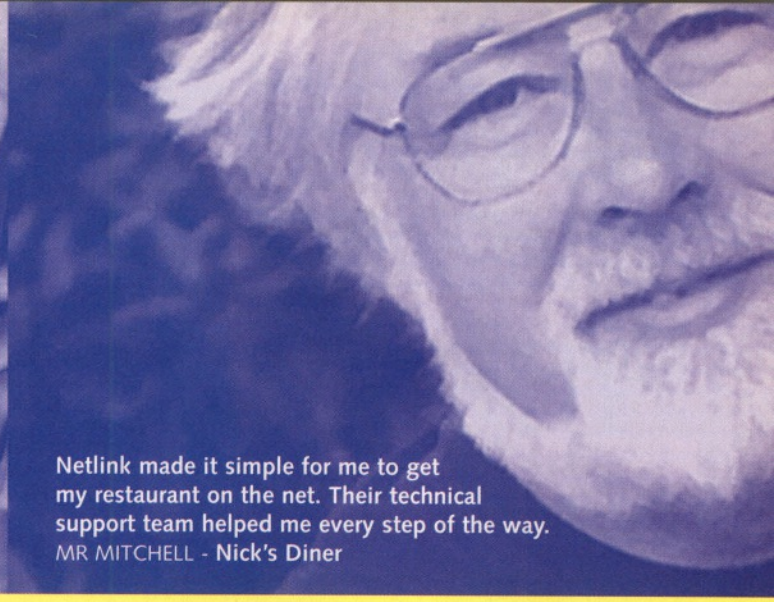

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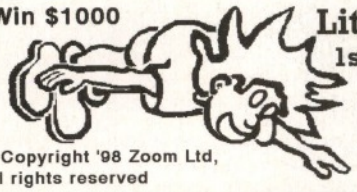

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provider la

The *Internet Magazine* ISP Lab tests put UK's top service providers through a rigorous set of performance tests. Find out how your provider scored in our exclusive tests. Turn to page 145 to find out which ISP wins our award for most consistent performance over the last six months

Choosing an ISP is a tricky business, but one of the few areas of differentiation is performance. So, every month *Internet Magazine* tests the performance of more than 100 service providers. We check out their availability by tracking the busy tones when we try to connect. Once we're connected, we test out Web speeds by timing how quickly we can download four Web pages.

These tests are run repeatedly over a period of about three weeks each month. This means we get a good indication of the ISP's performance over the test period.

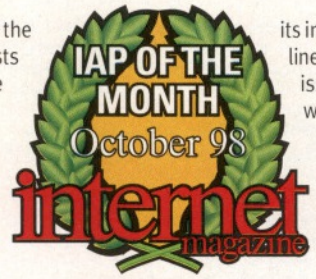
As well as the tests we conduct every month, we also produce another set of ratings – the six-month tests. These ratings are produced from the last six months of test data and give a good indication of a service provider's performance over an extended period of time (see page 145 for details).

And the winner is...

This month's coveted first place position goes to REDNET. The company made an impressive leap up the chart from last month's 31st position. REDNET notched up a reasonable availability score, but it was its excellent average Web download speed that won the company first place position.

"We've recently added a connection to LONAP (London Access Point, an alternative to LINX) and a second upstream connection to BT," says Mette Bradfield, marketing manager of REDNET. "We haven't changed anything drastically, but we have been using our equipment better."

The competition for the top places in the tests has been fierce. The difference between first and 10th place was only one and a half seconds for Web download speeds and only a few percentage points separated the availability ratings.



Close behind REDNET come AAP Internet and Power Internet – both have been steadily climbing our charts over the past few months.

Last month's winner, Cable Internet, drops down to 32nd place, mainly due to a disappointing average Web download speed. The ISP performed reasonably on downloading the Janet site, but fell behind with its other downloads.

Big providers slip

Many of the larger providers slipped down the chart this month, mainly due to a poor performance in the average Web download speed component of our tests. UUNet dropped to 88th place, while Demon slipped to number 75 and Global dropped to 85.

Availability was also a problem for some of the bigger ISPs, especially those using the City of London Telecom (COLT) backbone. Demon, for example, had a disappointing 83 per cent availability rating.

Other providers which use telephone lines supplied by COLT also had low availability ratings. CIX, for example, had problems with its incoming phone lines. "There are some issues with COLT, and we are working with the company to try and find out where they lie," says Rob Lee, support manager at CIX. "Until now, we've relied on COLT and Telewest for our backbones, but we are now looking to expand and take Energis on board to increase the redundancy in our network."

A perfect score

Of the 104 ISPs tested this month, 37 managed to get a 100 per cent availability rating – which means we got through to the service provider on every call we made. An impressive 92 ISPs scored an availability rating of more than 90 per cent.

This month's averages

The average availability rating this month is an excellent 95.75 per cent, unchanged from last month's average. The average Web download speed was 30.39 seconds. As we change the Web sites we test every month, we can't make direct comparisons between this and last month's figure. What's more, the Web sites we tested this month are bigger and so take longer to download than last month's sites.

Where did they go?

An error on our part meant that Frontier Internet wasn't included in our tests in the August issue. Although the company got an availability rating of 100 per cent, we weren't able to produce an average Web download speed.

A technical problem meant that we couldn't test the download speed for CyberWare in our September issue. However, it did get an availability rating of 99.62 per cent.

The only ISP tests that count

The Internet Magazine ISP tests are based on proven scientific testing principles. We don't ask other people to do our testing – it's all done in-house under the close scrutiny of our team of experts. We make sure that we connect to each ISP many times – this month we made over 7,000 calls.

The results produced by this extensive testing procedure are then processed through a series of databases and spreadsheets to produce the results you see here. At every stage of the process, the results are checked and audited. Next month, we'll also be unveiling some exciting enhancements to the tests – we'll be testing more Web sites and taking a closer look at the performance of ISPs.

Our tests are designed to test the quality and speed of the infrastructure of an ISP – we don't test their technical support, pricing or software. We looked at these factors in our ISP of the year feature (December 97). You can get hold of this article from our Faxback service, see page 126 for details.

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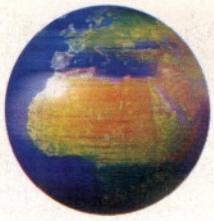

This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This month	Last month	Provider	Telephone	Average availability (in per cent)	Average Web speed (secs)	JANET average speed (secs)	San Francisco Uni average speed (secs)	Berlin Morgenpost average speed (secs)	Terrascope US average speed (secs)
1	31	REDNET	(01494) 511 640	95.65	18.06	5.71	18.88	14.25	33.4
2	24	AAP Internet	(0181) 427 1166	97.87	19.37	4.89	19.3	17.24	36.02
3	13	Power Internet	(0500) 011501	97.89	19.57	4.92	21.44	19.9	32
4	34	Gemsoft	(0114) 275 7070	100	20.21	4.69	20.67	16.55	38.94
5	N/A	Cheapnet	(0990) 168160	100	20.27	4.65	16.74	20.15	39.55
6	32	TriNET	(01539 731000	100	20.57	5.44	19.8	23.94	33.11
7	88	AIC-ENTANET	(0500) 368 263	100	20.59	6.93	19.33	22.31	33.78
8	12	Nildram	(0800) 072 0460	98.94	20.38	4.09	18.97	18.71	39.75
9	33	Internet for Business	(01224) 333 300	97.87	20.41	5.55	20.29	17.42	38.36
10	35	Datanet	(01252) 810 081	100	20.89	5.03	20.83	24.78	32.93
11	30	CableNet	(01424) 830 700	100	21.4	4.27	20.86	19.32	41.15
12	40	LondonWeb Communications	(0800) 026 8306	100	22.36	4.97	20.92	22.8	40.75
13	77	ENTANET	(01279) 865 290	100	22.43	7.23	19.7	18.38	44.41
14	5	ProWeb	(0500) 636 343	95.88	21.54	5.35	19.18	21.81	39.84
15	91	Direct Net @ccess	(01232) 201 555	97.83	22.07	6.09	22.49	19.24	40.44
16	90	Enterprise	(01624) 677 666	97.78	22.47	7.43	23.45	17.9	41.1
17	14	Thrust World	(0800) 980 5454	90	20.72	3.93	24.37	15.43	39.14
18	27	Cerbernet	(0171) 360 8000	100	23.12	7.45	21.49	23.92	39.62
19	N/A	EMNET	(0115) 9568260	100	23.23	7	25.56	25.05	35.32
20	8	Sonnet Internet	(0171) 891 2000	93.62	21.99	5.11	25.43	17.05	40.37
21	19	CompuServe	(0990) 000 200	97.83	23	5.36	27.79	18.19	40.65
22	16	Freedom To Surf	(0181) 881 2111	100	23.51	6.5	32.64	13.88	41.02
23	9	Primex	(01908) 643 597	100	23.53	4.13	27.64	23.95	38.4
24	39	Netcom Internet	(0800) 980 9107	97.85	23.03	9.52	23.29	21.49	37.81
25		Uninet Internet Services	(0800) 7837499	97.92	23.14	4.61	34.84	21.16	31.93
26	87	INTERact	(01753) 776 699	94.79	22.52	4.85	24.67	20.23	40.33
27	4	Technocom	(01753) 714 200	91.84	22.05	6.13	28.62	15.64	37.81
28	25	SAQ Network Services	(0800) 801 514	97.78	23.65	3.91	26.32	22.52	41.83
29	38	NewNet Ltd	(07000) 639 638	96.84	23.78	6.17	21.66	24.15	43.16
30	99	Intensive Networks	(01672) 511 054	100	24.64	6.67	22.71	16.32	52.84
31	72	Which? Online	(0645) 830 240	96.88	24.15	5.23	22.93	25.38	43.08
32	1	Cable Internet	(0500) 514542	97.83	24.42	4.42	20.88	25.86	46.52
33	7	Total Connectivity Providers	(01703) 571 300	100	25.04	5.48	26.66	24.06	43.96
34	56	NTL Internet	(0800) 607 608	100	25.34	5.32	31.17	21.78	43.09
35	37	ClaraNet	(0800) 358 2828	97.89	25.02	8.25	25.72	22.55	43.57
36	46	EntWeb	(0800) 525 470	97.83	25.09	6.71	19.83	30.64	43.19
37	15	Direct Connection	(0800) 072 0000	100	25.75	4.42	27.93	25.16	45.51
38	36	HiWay	(01635) 573 300	100	25.79	6	41.44	17.89	37.81
39	95	Wave Rider Internet	(0121) 603 3888	100	25.9	5.35	21.17	21.07	56
40	80	Virgin Net	(0500) 558 800	96.84	25.09	5.91	27.13	23.67	43.66
41	22	Internet Central	(01270) 611 000	100	25.94	6.98	34.34	18.95	43.49
42	63	CYBERphile Internet	(01543) 454 840	100	25.94	5.13	16.85	32.63	49.18
43	41	Netkonect	(0171) 345 7777	95.65	24.91	7.73	27.68	24.31	39.9
44	21	Intonet	(0181) 941 9195	100	26.28	5.8	25.23	22.23	51.85
45	50	Vossnet	(01753) 737 800	100	26.57	5.79	36.16	23.92	40.41
46	59	Legend Internet	(01274) 743 500	95.74	25.78	5.27	36.68	20.5	40.66
47	10	U-Net	(01925) 484 444	93.75	25.6	4.87	30.82	19.82	46.91
48	43	CIX	(0181) 255 5151	91.84	25.16	10.43	34.51	18.95	36.76
49	61	Internet UK	(01827) 711 722	100	27.55	11.94	28.01	22.53	47.7
50	3	DIALNet	(0800) 881 881	97.83	26.97	13.8	19.14	26.91	48.05
51	18	Avel Internet	(01237) 425100	100	27.93	5.91	25.98	18.18	61.64
52	29	Inter@lpha	(01703) 363 200	89.42	25.17	7.71	32.26	21.07	39.64
53	52	Moonlight Internet Services	(01276) 856 868	100	28.16	6.05	26.86	28.97	50.75

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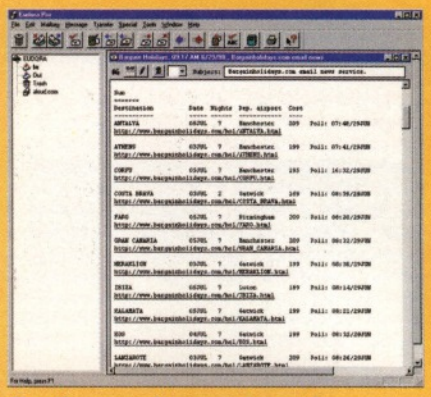

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This month's best-performing ISPs, as tested in *Internet Magazine*'s labs

This month	Last month	Provider	Telephone	Average availability (in per cent)	Average Web speed (secs)	JANET average speed (secs)	San Francisco Uni average speed (secs)	Berlin Morgenpost average speed (secs)	Terrascope US average speed (secs)
54	62	Internet Discovery	(0181) 694 2240	97.83	27.69	9.98	29.47	18	53.3
55	N/A	Pipemedia	(01455) 828 218	91.25	26.02	7.1	28.05	21.05	47.88
56	51	Telinco Internet Services	(0800) 542 0800	92.93	26.6	7.31	20.71	23.68	54.71
57	26	Success In Motion Internet Services	(0800) 0745 547	94.79	27.56	7.41	20.71	20.84	61.28
58	92	Frontier Internet Services	(0171) 536 9090	97.83	28.63	8.11	38.38	25.88	42.17
59	N/A	First Net Services	(0113) 294 4224	84.62	24.85	8.04	29	24.32	38.05
60	13	Power Internet	(01908) 605 188	97.83	28.77	5.6	25.33	20.23	63.93
61	75	Force 9	(0800) 073 7800	100	29.47	7.98	23.44	18.56	67.89
62	81	Newbury Internet	(01635) 569 123	100	29.56	5.71	23.38	25.35	63.81
63	23	Wyenet Internet Services	(01989) 762 476	100	29.98	8.16	39.74	21.59	50.43
64	55	AngliaNet	(01473) 211 922	92	27.75	9.82	40.18	19.06	41.93
65	86	Oxford CommUnity Internet	(01865) 856 000	100	30.87	17.16	42.24	24.2	39.9
66	84	Surflink	(0181) 903 2777	97.89	30.29	7.38	27.13	22.77	63.9
67	57	WorldWide Web Services	(01784) 898 800	93	28.82	5.81	24.92	25.46	59.07
68	2	NetDirect Internet	(0800) 731 3311	81.48	25.56	8.11	28.84	19.05	46.24
69	48	UK2Net	(0171) 538 0253	97.87	30.93	8.13	22.11	33.55	59.91
70	17	SoftProg NET	(0181) 788 0656	100	31.64	8.52	54.67	23.41	39.95
71	58	BT Internet	(0800) 800 001	90	28.73	7.78	31.98	20.59	54.59
72	96	Zoo Internet	(0345) 326 326	100	32.66	21.1	27.73	25.18	56.64
73	79	Prestel Online	(0990) 223 300	95.74	31.59	5.98	36.26	22.49	61.66
74	68	Easynet	(0541) 594 321	96.67	31.95	5.67	27.12	42.9	52.11
75	6	Pinnacle Internet	(01293) 613 686	64.18	31.98	6.65	21.65	59.22	40.38
76	100	Paradise Internet Network Services	(01256) 414 863	100	34.43	11.31	34.94	39.08	52.4
77	83	Demon Internet	(0181) 371 1234	83.02	28.63	10.3	37.07	17.26	49.9
78	44	LineOne	(0345) 777 464	91.84	32.26	8.81	33.05	23.45	63.74
79	N/A	CyberWare	(01733) 765 005	96.84	34.39	6.4	44.94	18.18	68.06
80	69	Metronet	(0800) 074 1881	94.74	33.74	9.1	38.48	32.89	54.46
81	20	Onyx Internet	(0345) 715 715	95.74	36.21	7.81	42.76	49.77	44.51
82	100	Northants Computer Centre	(01604) 622539	95.88	36.81	12.05	28.99	35.59	70.6
83	47	Mistral Internet	(01273) 747 432	100	38.59	5.82	36.32	18.61	93.61
84	82	Aviators Network	(01727) 868 468	97.89	37.95	9.58	31.35	39.98	70.89
85	71	FreeDotNet	(0181) 568 3377	90.29	35.2	10.25	31.08	50.26	49.21
86	54	Global Internet	(0870) 909 8041	93.75	36.56	6.56	35.62	41.7	62.35
87	49	WSS Internet Access	(01793) 420 764	98.94	38.91	8	33.37	65.43	48.84
88	76	The Internet Business	(01232) 424 190	74.79	29.57	16.26	23.96	27.15	50.9
89	11	UUNet (Pipex Dial)	(0500) 567 000	97.22	38.7	4.15	29.15	82.87	38.66
90	67	Pavilion Internet	(01273) 607 072	100	44.57	7.4	67.41	44.95	58.51
91	98	Wavenet	(01253) 794 386	96.81	44.06	9.83	34.06	28.35	104.02
92	103	UK Online	(01749) 333 333	84.38	41.75	9.09	34.07	46.18	77.65
93	42	Web Plus	(0345) 932 758	100	49.64	6.27	128.51	21.61	42.17
94	102	Newgate Communications	(0121) 327 6633	80.36	40.42	8.4	36.79	46.64	69.85
95	66	Baynet Internet	(01222) 256 401	100	50.57	5.52	132.35	18.63	45.79
96	70	WinNET Communications	(0181) 930 6688	96.81	49.67	5.2	30.07	88.81	74.6
97	85	I-Way	(0171) 734 5734	93.75	49.12	5.33	99.84	42.66	48.64
98	94	Kencomp Internet	(01539) 722 559	70.49	39.78	11.32	35.62	24.09	88.07
99	97	Cable & Wireless	(0500) 200 980	94.85	54.44	11.22	71.79	32.28	102.47
100	28	WebLeicester	(0116) 223 0070	92.86	57.63	9.34	86.78	33.34	101.07
101	60	Maidenet	(01628) 825 757	100	63.12	10.81	153	23.24	65.44
102	78	Thames Global Internet Services	(01344) 641 627	93.75	62.57	11.5	149.56	21.56	67.67
103	53	Andover On-Line	(01264) 334 822	96.67	66.3	8.05	117.19	40.75	99.22
104	93	Abel Internet	(0345) 576 015	86.79	61.67	10.23	83.63	67.31	85.52

How the performance tests work

The *Internet Magazine* provider Lab tests are designed to provide you with information on the speed and availability of Internet Service Providers. Every month, our testing system accesses each of the ISPs listed many times. Our system repeatedly checks:

- The availability of the ISPs. How easy is it to make the connection? How often are all their modems engaged?
- The speed of the connection. How long do a number of popular Web pages take to download?

The Web pages we use for the speed tests change each month. This month we've tested:

- **www.ja.net/documents/JANET_security_policy.html** – pages from the JANET educational network, hosted in the UK
- **www.sfsu.edu/~oip** – pages from San Francisco University, hosted in the US
- **www.berlinermorgenpost.de/bm/international/inhalt/archives/wehrmacht/index.html** – pages from the German paper, the Berliner Morgernpost, hosted in Germany
- **www.terrascope.org/ppp.html** – The Terrascope pages are hosted in the US. These pages give a good idea of the general speed of Web access through the ISP's network and their international bandwidth.

To rank the ISPs, we calculate the geometric mean of their availability and average Web performance. This figure is then used to rank the ISPs in order of overall performance. These two results are given equal weighting, so a provider with a below average availability but an above average Web speed could come higher in the rankings than one scoring 100 per cent in the availability ratings, but which has slower Web access speeds. The tests for this month ran from 5-24 August, 1998.

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How the ISPs performed over the last six months

Find out how your service provider has done in our unique chart...

	Provider	Phone	URL
1	Technocom	(01753) 714 200	www.technocom.net
2	Freedom to Surf	(0181) 881 2111	www.freedom2surf.net
3	REDNET	(01494) 511 640	www.red.net
4	Thrust World	(0800) 980 5454	www.thrustworld.co.uk
5	Nildram	(0800) 072 0460	www.nildram.net
6	ProWeb	(0500) 636 343	www.proweb.co.uk
7	SAQ Network Services	(0800) 801 514	www.saqnet.co.uk
8	Cable Internet	(0500) 500 100	www.cableinet.co.uk
9	Sonnet Internet	(0171) 891 2000	www.sonnet.co.uk
10	CIX	(0181) 255 5151	www.cix.co.uk
11	Primex	(01908) 643 597	www.primex.co.uk
12	Internet Central	(01270) 611 000	www.netcentral.co.uk
13	CableNet	(01424) 830 700	www.cablenet.net/cablenet
14	WyeNet	(01989) 762 476	www.wyenet.co.uk
15	Wave Rider Internet	(0121) 603 3888	www.waverider.co.uk
16	CommUnity Internet	(01865) 856 000	www.community.net.uk
17	DIALnet	(0800) 881 881	www.dialnet.com
18	Hiway	(01635) 573 300	www.hiway.co.uk
19	UUNET (Pipex Dial)	(0500) 567 000	www.uk.uu.net
20	NetDirect Internet	(0800) 731 3311	www.netdirect.net.uk
21	SoftProg NET	(0181) 788 0656	www.softprog.net
22	CompuServe	(0990) 000 200	www.compuserve.co.uk
23	Cerbernet	(0171) 360 8000	www.cerbernet.net
24	NewNet	(07000) 639 638	www.newnet.co.uk/home
25	Direct Connection	(0800) 072 0000	www.dircon.net
26	Total Connectivity Providers	(01703) 571 300	www.tcp.co.uk
27	Netcom Internet	(0800) 980 9107	www.netcom.net.uk
28	Moonlight Internet Services	(01276) 856 868	www.moon-light.co.uk
29	Internet for Business	(01224) 333 300	www.wintermute.co.uk
30	VossNet	(01753) 737 800	www.vossnet.co.uk
31	U-Net	(01925) 484 444	www.u-net.net
32	Pinnacle Internet	(01293) 613 686	www.pncl.co.uk
33	AAP Internet	(0181) 427 1166	www.aapi.co.uk
34	Intonet	(0181) 941 9195	www.intonet.co.uk
35	UK2NET	(0171) 538 0253	www.uk2net.com
36	Netkonect	(0171) 345 7777	www.netkonect.nco.uk
37	Onyx Internet	(0345) 715 715	www.onyxnet.co.uk
38	Telinco Internet Services	(0800) 542 0800	www.telinco.net
39	Inter@lpha	(01703) 363 200	www.interalpha.net
40	Mistral Internet	(01273) 747 432	www.mistral.co.uk
41	Demon Internet	(0181) 371 1234	www.demon.net
42	MetroNet	(0800) 074 1881	www.metronet.co.uk
43	WSS Internet Access	(01793) 420 764	www.WSkiSoft.co.uk
44	Intensive Networks	(01672) 511 054	www.intensive.net
45	Prestel Online	(0990) 223 300	www.prestel.co.uk
46	Enterprise	(01624) 677 666	www.enterprise.net
47	CYBERphile Internet	(01543) 454 840	www.cyberphile.co.uk
48	Newbury Internet	(01635) 569 123	www.newbury.net
49	Direct Net @ccess	(01232) 201 555	www.d-n-a.net
50	LineOne	(0345) 777 464	www.LineOne.net
51	BT Internet	(0800) 800 001	www.btinternet.com
52	Power Internet	(01908) 605 188	www.powernet.co.uk
53	Global Internet	(0870) 909 8041	www.global.net.uk
54	I-Way	(0171) 734 5734	www.i-way.co.uk
55	London Web Communications	(0800) 026 8306	www.londonweb.net
56	FreeDotNet	(0181) 568 3377	www.thefree.net
57	ClaraNET	(0800) 358 2828	www.clara.net
58	Web Plus	(0345) 932 758	www.webplus.co.uk
59	AngliaNet	(01473) 211 922	www.anglianet.co.uk/anglianet
60	WorldWide Web Services	(01784) 898 800	www.webs.co.uk
61	Avel Internet	(01237) 425100	www.avel.co.uk
62	TriNET	(01539) 731 000	www.trinetimb.com
63	The Internet Business	(01232) 424 190	www.tibus.net
64	Datanet	(01252) 810 081	www.data.net.uk
65	Aviators Network	(01727) 868 468	www.avnet.co.uk
66	Maidenet	(01628) 825 757	www.maidenet.co.uk
67	Northants Computer Centre	(01604) 622539	www.nccnet.co.uk
68	Legend Internet	(01274) 743 500	www.legend.co.uk
69	PowerNet	(0500) 011501	www.pwernet-int.co.uk
70	Force 9	(0800) 073 7800	www.force9.net
71	Paradise Internet Network Services	(01256) 414 863	www.pins.co.uk
72	Which? Online	(0645) 830 240	www.which.net
73	Thames Global Internet Services	(01344) 641 627	www.tgis.co.uk
74	Internet Discovery	(0181) 694 2240	www.idiscover.co.uk
75	Virgin Net	(0500) 558 800	www.virgin.net
76	Andover On-line	(01264) 334 822	www.andover.co.uk
77	WebLeicester	(0116) 223 0070	www.webleicester.co.uk
78	Cable & Wireless Internet	(0500) 200 980	www.cwcom.net
79	Abel Internet	(0345) 576 015	www.abel.net.uk
80	Pavilion Internet	(01273) 607 072	www.pavilion.co.uk
81	Easynet	(0541) 594 321	www.easynet.co.uk
82	Baynet	(01222) 256 401	www.baynet.co.uk
83	Zoo Internet	(0345) 326 326	www.zoo.co.uk
84	Wavenet	(01253) 794 386	www.wavenet.co.uk
85	Kencomp Internet	(01539) 722 559	www.kencomp.net
86	Internet UK	(01827) 711 722	www.zipmail.co.uk
87	INTERact	(01753) 776 699	www.interact.net.uk
88	Surflink	(0181) 903 2777	www.surflink.co.uk
89	UK Online	(01749) 333 333	www.ukonline.co.uk

Top performers in the past six months

As well as our normal monthly tests, every month we produce a table showing how the ISPs have performed over the past six months. We're all after consistency in our service provider's performance, so it's important to check out these figures before you choose and ISP.

We take six month's worth of data for availability and Web access speed and produce an overall average for both sets of figures. These averages are then used to calculate a rating for the ISPs, and from this we work out the relative position of the service providers.

The table only includes service providers that have been in our tests for the past six months.

The results

This month, 89 providers made it into our six-month result tables. Technocom retains its top position , despite dropping down our monthly tests (the ISP dropped from fourth position to 27th place).

Hot on the heels of Techocom are Freedom To Surf and REDNET. In fact, there's only a very small margin of difference between all the providers in the top 10.

Changes in the top 10

Cable Internet slips down from last month's fifth place to eighth, while Nildram moves up to fifth place from last month's 10th position. Likewise, Sonnet continues its climb up the rankings to ninth place, up two from last month. Thrust World has been slowly making its way to the top of the table – this month it's up another two places.

UUNet drops down to 19th place from its impressive third position last month . The company slipped down dramatically in this month's results – plummetting to 89th place from 11th. UUNet was let down by its average Web download speed. BT Internet continues to turn in a fairly poor performance, coming in at 52, one place down from last month.

pick a prov

The most up to date information is vital when you're choosing from the hundreds of Internet service providers and you'll find no better guide than the next five pages of our Pick a Provider section

Changes and updates

Force9, now with 18,000 subscribers, has struck it rich with £250,000 worth of investment. The cash will be used to upgrade the company's hardware – all the major servers will be switched to Sun Ultra systems.
www.force9.net

Netkonect is one of the first ISPs to use the Gemini Submarine Cable System – two huge cables running under the Atlantic, built by Cable & Wireless and WorldCom – which should mean faster Net access.
www.netkonect.co.uk

X-stream, the ISP that doesn't charge a monthly fee, has signed up 58,000 members to its service in the five months since launching.
www.x-stream.com

In the US, Apple has chosen Earthlink as the default ISP on the new iMac machines. Service providers on UK machines, which should be on sale by the time you read this, include Direct Connection, LineOne and BT Internet.
www.euro.apple.com

New ISPs

Kingston Internet uses the Planet Online backbone and charges £9.57 per month.
www.kingston-internet.net

Warwickshire-based ISP redvan Internet charges £8 a month and uses backbones from Wisper and Cable Internet.
www.redvan.net

K2 Internet Services is focusing on the South East, but hopes to go national before the end of the year. Three hours online costs only £3.99 a month and unlimited access costs £11.95. **www.k2net.co.uk**

Gimmel Internet charges £10 a month for dial-up access.
www.gimmel.net

Who is OrangeNet?

We've been inundated with requests about the new ISP OrangeNet. We had some difficulty contacting the company, but have been reliably informed that OrangeNet is adding extra bandwidth and phone lines to cope with the number of new subscribers. Please note, OrangeNet is not related to Hutchinson Telecom or Orange mobile telephones.
www.orangenet.co.uk

Jumping on the wagon

Canal and Riverboat magazine (**www.canalandriverboat.co.uk**) is to become an ISP, as are Arsenal Football Club (**www.arsenal.co .uk**), and *Cosmopolitan* magazine (**www.designercity.com /cosmopolitan**). And if you want to subscribe to TescoNet (**www.tesco.net**) it costs £8.99 per month. Pick up a connection pack from any Tesco branch.

In brief

Scotland On Line has launched Travel Scotland (**www.travel scotland.co.uk**), a free interactive guide to Scotland's attractions.

The telephone number for Internet Solutions for Business has changed to (01203) 633 177.

If you've subscribed to an ISP not mentioned here, are an ISP with some news, or want to be included in our ISP tests, please email us at: **providers@internet.emap.com**

How to choose an ISP

It's crucial to choose a service provider that gives you local call access to the Net. Most ISPs let you connect from anywhere on the mainland UK for the price of a local phone call. They use systems run by companies such as BT, Energis and Mercury, where the phone number starts 0345, 0645 or 0845.

The next step is to look at how the providers charge for their services. Most ISPs charge a flat fee for unlimited use of the Net. They assume the cost of the phone call will stop you staying online for too long. Some companies (such as AOL, MSN and CompuServe, which also provide their own content) charge for the time you're online. They have options that give you three or five hours online, for example. Once you exceed this figure you're charged at an hourly rate. This might be a cheaper option if you only use the Net occasionally, but it's easy to spend longer online than you think, so make sure the charges don't rack up. It's also possible to get a cut-price email-only account from companies such as FreeDotNet.

Out into the big wide Internet

Another crucial consideration is your ISP's connection to the rest of the Internet. If its connections are small and clogged, you can expect slow Web access, email that takes a long time to be delivered and many other problems. We run regular tests of service providers to find the fastest. See page 140 for more details.

Supporting the customer

Technical support is a vital part of the service. We've added the hours support is available to our listings. Make sure you can get support during the times you're going to be using the service. And don't be afraid to ask for the technical support number before you sign up and give it a ring, armed with a tricky question you've prepared earlier.

You should also check that your service provider is a member of the ISPA (Internet Service Providers Association). The ISPA was set up to establish a code of practice for service providers. Among other factors, the code encourages self-regulation for ISPs. What's more, if you have a complaint about your service provider you can always take it to the ISPA (**www.ispa.org.uk**).

● Once you've signed up, you can test your email account by sending an email to **newuser@internet.emap.com**

Forget the virtual world, let real people in real offices guide you through cyberspace.
Whether you're already connected to the Net or wondering how to make it work for you, call the
i-way helpline 0118 958 0058
For online help, email info@i-way.net.uk or visit www.i-way.co.uk
Soho 0171 734 5734 West London 0181 758 0058 Oxford 01865 200783 Swindon 01666 860100
i-way

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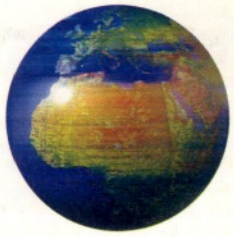

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Online Service Providers (you have to pay for content)						
AOL	(0800) 279 1234	queryuk@aol.com	www.aol.co.uk	7.45-10.30 Mon-Fri / 9.00-17.30 Sat	from £4.95	AOL
CompuServe	(0990) 000 200	customerservice@compuserve.co.uk	www.compuserve.co.uk	8.00-midnight every day	from £6.50	CompuServe
LineOne	(0345) 777 464	enquiries@LineOne.net	www.LineOne.net	8.00-22.00 Mon-Sat / 10.00-22.00 Sun	from £9.95	BTnet
MSN	(0345) 002 000	ukweb@microsoft-contact.co.uk	www.uk.msn.com	24 hours a day	from £4.95	UUNET
Which? On-line	(0645) 830 240	support@which.net	www.which.net	24 hours a day	£14.75	NTL Internet
Business providers (those that provide leased line and ISDN access only)						
1st Solution Internet	(01344) 752 444	sales@1st-solution.net	www.1st-solution.net	9.00-18.30 Mon-Fri	ISDN / LLO	GX Networks
ACE	(01670) 528 204	info@ace.co.uk	www.ace.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	Planet
Apple Centre Warrington	(01925) 444 499	sales@applecentre.com	www.applecentre.com	9.00-17.30 Mon-Fri	ISDN / LLO	Wisper
BTnet	(0345) 585 100	sales@bt.net	www.bt.net	24 hours a day	ISDN / LLO	BTnet
BusinessNet	(0171) 390 9933	sales@business.net.uk	www.business.net.uk	24 hours a day	ISDN / LLO	BusinessNet
Cerbernet	(0171) 360 8000	sales@cerbernet. net	www.cerbernet.net	9.00-18.00 Mon-Fri/pager Sat-Sun	ISDN / LLO	Wisper
COLT	(0171) 390 9099	info@colt.net	www.colt.net	24 hours a day	LLO	COLT Internet
CommUnity Internet	(01865) 856 000	info@community.net.uk	www.community.net.uk	9.00-18.00 Mon-Fri	ISDN / LLO	VBCnet / Wisper
Data Link Internet	(01522) 681 100	sales@data-link.net	www.data-link.net	9.00-17.00 Mon-Fri	ISDN / LLO	BTnet
Dial Internet	(01372) 456 000	sales@dialin.co.uk	www.dialin.co.uk	8.30-18.30 Mon-Fri	ISDN / LLO	BTnet
DIALnet Connect	(0800) 881 881	sales@dialnet.com	www.dialnet.com	24 hours a day	ISDN / LLO	Cable Internet / Wisper
ElectricMail	(01223) 501 333	info@elmail.co.uk	www.elmail.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	GX Networks
Epinet	(01242) 821 000	info@epinet.co.uk	www.epinet.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	GX Networks / Energis
Genesis Project	(01232) 572 000	sales@gpl.net	www.gpl.net	9.00-20.00 every day	ISDN / LLO	NTL Internet
GX Networks	(0181) 957 1250	sales@gxn.net	www.gxn.net	9.00-18.00 Mon-Fri	LLO	GX Networks
I-Way Soho	(0171) 734 5734	sales@i-way.net.uk	www.i-way.co.uk	8.00-18.30 Mon-Fri	ISDN / LLO	VBCnet / UUNET / PSInet
ICM NetServ	(0800) 614 581	sales@netserv.net	www.netserv.net	9.00-17.30 Mon-Fri	ISDN / LLO	Wisper / BTnet
Impact Web Publishing	(01628) 522 099	nikki@impactwp.com	www.impactwp.com	9.00-18.00 Mon-Fri	LLO	GX Networks
Internet Central	(01270) 611 000	sales@netcentral.co.uk	www.netcentral.co.uk	9.00-18.00 Mon-Sat	ISDN / LLO	Cable Internet / ISPC
Internet for Business	(01224) 333 300	info@wintermute.co.uk	www.wintermute.co.uk	9.00-18.00 Mon-Fri	ISDN / LLO	Wisper
Internet Network Services	(0181) 239 5000	info@insnet.net	www.insnet.net	24 hours a day	ISDN / LLO	Internet Network Services
Internet Solutions for Business	(0800) 731 8460	sales@is4b.net	www.business-solutions.net	24 hours a day	ISDN / LLO	BTnet / PSInet
IPF.NET	(0171) 213 9666	enquiries@ipf.net.uk	www.ipf.net.uk	9.00am-18.00 Mon-Fri	ISDN / LLO	IPF.NET
iQ Internet	(01273) 327 088	sales@iql.co.uk	www.iql.co.uk	9.00-17.30 Mon-Fri	ISDN / LLO	Planet
ISPC	(01628) 639 595	barryr@ispc.net	www.ispc.net	9.00-17.00 Mon-Fri	ISDN / LLO	Cable Internet / ISPC
Mannet	(01624) 623 841	postmaster@mcb.net	www.mcb.net	9.00-17.30 Mon-Fri	ISDN / LLO	BTnet
Mitoo	(0171) 209 1515	sales@mitoo.co.uk	www.mitoo.co.uk	9.00-17.30 Mon-Fri	ISDN / LLO	BTnet
NACAMAR	(01438) 715 100	info@nacamar.net.uk	www.nacamar.co.uk	24 hours a day	LLO	NACAMAR
NetForce Group	(01245) 257 788	sales@netforce.net	www.netforce.net	9.00-17.00 Mon-Fri	ISDN / LLO	Wisper / BTnet
Nettec	(0171) 514 9500	info@nettec.co.uk	www.nettec.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	GX Networks
NORWEB.net	(0800) 195 0196	sales@norwebcomms.com	www.norwebcomms.com	24 hours a day	ISDN / LLO	The Web Factory
NTL Internet / ENABLIS	(0800) 607 608	sales@ntli.com	www.ntli.com	24 hours a day	ISDN / LLO	NTL Internet
Planet Online	(0113) 234 5566	info@theplanet.uk	www.theplanet.net	24 hours a day	ISDN / LLO	Planet Online
PlusNet Technologies	(0800) 073 7370	sales@plus.net.uk	www.plus.net.uk	24 hours a day	ISDN / LLO	PlusNet
Quza	(0800) 528 0000	info@quza.com	www.quza.com	24 hours a day	ISDN / LLO	Quza
REDNET	(01494) 511 640	info@red.net	www.red.net	9.00-17.30 Mon-Fri	ISDN / LLO	INS
Relay Business Systems	(0345) 369 999	enquiries@relay.co.uk	www.relay.co.uk	24 hours a day	ISDN / LLO	BTnet
Sardius	(01242) 521 133	info@sardius.com	www.sardius.net	9.00-6.00 Mon-Fri	ISDN / LLO	Netkonect
Small Planet	(0171) 515 9889	admin@smallplanet.co.uk	www.smallplanet.co.uk	10.00-18.00 Mon-Fri	ISDN / LLO	BTnet
Smartways Internet	(01604) 670 500	info@smartways.com	www.smartways.com	9.00-18.00 Mon-Fri	ISDN / LLO	Wisper
Star Internet	(01285) 647 022	info@star.co.uk	www.star.co.uk	8.30-19.00 Mon-Fri	ISDN / LLO	Global One / Wisper
Technocom	(01753) 714 200	isales@technocom.net	www.technocom.net	9.00-17.30 Mon-Fri	ISDN / LLO	Technocom
The Education Exchange (EDEX)	(0181) 296 9201	info@internet.net.uk	www.internet.net.uk	24 hours a day	ISDN / LLO	INS
VAS-NET	(01732) 865 555	sales@vas-net.net	www.vas-net.net	8.00-20.00 every day	ISDN / LLO	VAS-NET
VBCnet	(0117) 929 1316	sales@vbc.net	www.vbc.net	24 hours a day	ISDN / LLO	VBCnet
Web Plus	(0345) 932 758	sales@webplus.co.uk	www.webplus.co.uk	9.00-21.00 Mon-Fri/9.00-20.00 w/e	ISDN / LLO	Web Ltd / BTnet
WebScotland	(0141) 418 0880	sales@webscotland.co.uk	www.webscotland.co.uk	9.00-17.00 Mon-Fri	ISDN / LLO	BTnet
Wisper	(0171) 432 0324	sales@wisper.net	www.wisper.net	24 hours a day	LLO	Wisper
Zereau	(0800) 064 1770	sales@zereau.com	www.zereau.com	9.00-17.30 Mon-Fri	LLO	Wisper
Full UK coverage						
AAP Internet	(0181) 427 1166	sales@aapi.co.uk	www.aapi.co.uk	10.00-20.00 Mon-Fri/14.00-18.00 w/e	£12.91*	Netkonect
Abel Internet	(0345) 576 015	info@abel.co.uk	www.abel.net.uk	9.00-23.00 every day	£8.81*	Quza / Racal
ACGNET	(0171) 377 9114	sales@acgnet.co.uk	www.acgnet.co.uk	9.00-18.00 Mon-Fri	£11.81*	Nildram
AIC	(01279) 865 290	entanet@aic.co.uk	www.aic.co.uk/entanet	9.00-18.00 Mon-Sat	£8.81*	VBCnet
Airtime Internet Resources	(01254) 676 921	sales@airtime.co.uk	www.airtime.co.uk	9.00-17.00 Mon-Fri	£15.27*	UUNET
Albatross	(01603) 442 233	enquiries@albatross.co.uk	www.albatross.co.uk	9.00-19.30 Mon-Fri	£11.74*	BTnet
Argo Interactive	(0500) 585 586	info@argonet.co.uk	www.argonet.co.uk	10.00-17.00 Mon-Sat	£11.75*	UUNET
Astra Internet	(0800) 018 2001	sales@astra.co.uk	www.astra.co.uk	9.00-17.00 Mon-Fri/9.00-12.00 Sat	£12.93*	GX Networks
Atlas	(0171) 312 0400	info@atlas.co.uk	www.atlas.co.uk	24 hours a day	£14.10*	UUNET
Aviators Network	(01727) 868 468	info@avnet.co.uk	www.avnet.co.uk	24 hour callback	£11.75*	PSInet
Baynet	(01222) 256 401	enq@baynet.co.uk	www.baynet.co.uk	8.00-18.00 Mon-Fri/9.00-17.30 Sat	£12	Netkonect
Beacon Internet Services	(01749) 831 056	sales@thebeacon.co.uk	www.n-e-t.co.uk/beacon/	8.00-18.00 Mon-Fri	£11.75*	NetOnline

Key: LLO – leased line only ISDN/LLO – ISDN & leased line only * – price includes VAT

pick a provider

The most comprehensive listing of UK Internet service providers

Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
Boots Internet	(01462) 743 112	support@boots.com	www.boots.com	9.00-22.00 Mon-Fri	£12.75	VBCnet
breathe on line	(0800) 298 3030	sales@breathe.co.uk	www.breathe.co.uk	24 hours a day	from £6.99*	Scottish Telecom
BT Internet	(0800) 800 001	support@btinternet.com.	www.btinternet.com	24 hours a day	£11.75*	BTnet
Cable & Wireless Internet	(0500) 200 980	support@mcmail.com	www.cwcom.net	24 hours a day	£10*	Cable & Wireless
Cable Internet	(0500) 500 100	sales@cableinet.co.uk	www.cableinet.co.uk	9.00-21.00 every day	£11.75*	Cable Internet
Cable Online	(0800) 506 506	info@cableol.co.uk	www.cableol.net	24 hours a day	£11.75*	NTL Internet
CableNet	(01424) 830 900	info@cablenet.net.	www.cablenet.net/cablenet	24 hours a day	£11.69*	VBCnet
Castle.Net	(0181) 477 5623	sales@castle.net.uk	www.castle.net.uk	6.00-21.00 Mon-Fri	£8.81*	Technocom
Charis Internet Services	(0121) 248 5800	duncan@charis.net	www.charis.net	8.00-19.00 Mon-Fri / 8.00-12.00 Sat	£11.75*	Cable Internet
Cheapnet	(0990) 168 160	info@cheapnet.co.uk	www.cheapnet.co.uk	9.00-18.30 Mon-Fri	£58.75*pa	Capethorn
Chertsey Communications	(01344) 640 594	info@chertsey.com	www.chertsey.co.uk	9.00-22.00 every day	£11.75*	Wisper / VBCnet
City Netgates	(0117) 907 4000	info@netgates.co.uk	www.netgates.co.uk	8.00-18.00 Mon-Fri	£11.75*	Wisper
CIX	(0181) 255 5151	robert@cix.co.uk	www.cix.co.uk	9.00-22.00 Mon-Fri / 12.00-18.00 Sat	£7.34*	BTnet / INS
ClaraNET	(0800) 358 2828	info@clara.net	www.clara.net	24 hours a day	£11.63*	Netkonect / INS
Cocoon Internet Services	(0171) 792 8945	admin@cocoon.co.uk	www.cocoon.co.uk	8.00-20.00 Mon-Fri/10.00-19.00 w/e	£17.62*	UUNET
Colloquium	(0500) 008 543	sales@colloquium.co.uk	www.colloquium.co.uk	24 hours a day	£14.10*	UUNET
Computalynx	(01604) 231 437	sales@computalynx.co.uk	www.computalynx.co.uk	9.00-21.00 every day	£11.75*	Wisper
CPD Online	(0181) 446 7890	sales@cpd.co.uk	www.cyberspace.cpd.co.uk	9.00-18.00 Mon-Fri	£11.75*	Nildram
Cyber Ware	(01733) 765 005	steve@cyberware.co.uk	www.cyberware.co.uk	9.00-midnight Mon-Fri	£11.74*	BTnet
CYBERphile Internet	(01543) 454 840	info@cyberphile.co.uk	www.cyberphile.co.uk	8.30-18.30 Mon-Fri	£11.75*	Xara
Cyberscape	(01253) 724 000	glenn@cyberscape.net	www.cyberscape.net	10.00-18.00 Mon-Fri	£12	Cable Internet / ISPC
Datanet	(01252) 810 081	info@data.net.uk	www.data.net.uk	24 hours a day	£17.62*	Planet Online
Demon	(0181) 371 1234	sales@demon.net	www.demon.net	24 hours a day	£11.75*	Demon
Direct Connection	(0800) 072 0000	sales@dircon.net	www.dircon.net	9.00-21.00 Mon-Fri/10.00-17.00 w/e	£13.50*	Direct Connection
Direct Net @ccess	(01232) 201 555	info@d-n-a.net	www.d-n-a.net	9.00-18.00 Mon-Sat	£8.82*	NTL Internet
Easynet	(0541) 594 321	sales@easynet.net	www.easynet.co.uk	24 hours a day	£11.99*	Easynet / BTnet
Ecosse Telecommunications	(0800) 026 7092	netsales@ecossetel.co.uk	www.ecossetel.co.uk	9.30-17.30 Mon-Fri	from £9.99*	Netkonect / Ecossetel
EDI	(01539) 731 000	info@edi.co.uk	www.edi.co.uk	9.00-17.30 Mon-Sat	£15	Planet Online
ENTANET	(0500) 368 263	info@enta.net	www.enta.net	9.00-21.00 every day	£10.58*	Cable & Wireless
Enterprise	(01624) 677 666	sales@enterprise.net	www.enterprise.net	9.00-22.00 Mon-Fri/10.00-16.00 w/e	£9.40*	BTnet
EntWeb	(0800) 525 470	info@entweb.co.uk	www.entweb.co.uk	8.00-20.30 Mon-Fri/10-6 Sat/10-4 Sun	£10*	Telinco
European Gateway	(0411) 704 219	aikend@easynet.co.uk	www.europeangateway.com	24 hours a day	£13*	Easynet
Farebase	(01322) 280 011	Info@farebase.co.uk	www.farebase.net	7.00-19.00 Mon-Fri/10.00-15.00 w/e	£16.45*	Easynet
Force 9	(0800) 073 7800	sales@force9.net	www.force9.net	7.00-23.00 every day	£9.99*	Force 9
Freedom to Surf	(0181) 881 2111	sales@freedom2surf.net	www.freedom2surf.net	9.30-17.30 Mon-Fri	£11.75*	Freedom to Surf
FreeDotNet	(0181) 568 3377	info@thefree.net	www.thefree.net	9.00-17.00 Mon-Fri	from £1.25*	Worldcom
Frontier Internet Services	(0171) 536 9090	info@ftech.net	www.ftech.co.uk	9.00-19.00 Mon-Fri/noon-18.00 Sat	£11.75*	GX Networks / Wisper
Gemsoft	(0114) 275 7070	sales@gemsoft.net	www.gemsoft.net	9.00-17.30 Mon-Sat	£12.99	Wisper / INS
Gimmel	(0800) 542 5200	info@gimmel.com	www.gimmel.net	9.00-21.00 Mon-Sat	£10*	Cable Internet / ISPC
Global Internet	(0870) 909 8041	info@global.net.uk	www.global.net.uk	9.00-21.00 Mon-Fri/ 10.00-18.00 w/e	£11.75*	BTnet / GX Networks
Globewide Internet Services	(0161) 953 4018	info@globewide.com	www.globewide.com	10.00-22.00 Mon-Fri	£10*	BTnet / Wisper
GreenNet	(0171) 713 1941	support@gn.apc.org	www.gn.apc.org	10.00-18.00 Mon-Fri	£15.86*	UUNET
Hi-Net	(0181) 532 6532	internet@higrade.com	www.hi-net.co.uk	24 hours a day	£11.75*	Planet Online
Hiway	(01635) 573 300	info@hiway.co.uk	www.hiway.co.uk	8.30-18.00 Mon-Fri	£14.69*	GX Networks / Wisper
IBM Global Services	(0990) 426 426	globalnetwork@uk.ibm.com	www.ibm.net	9.00-17.00 Mon-Fri	£17.62*	IBM Global Network
Intensive Networks	(01672) 511 054	sales@intensive.net	www.intensive.net	9.00-19.00 Mon-Fri	£11.75*	Wisper
Internet UK	(01827) 711 722	sales@zipmail.co.uk	www.zipmail.co.uk	9.00-17.30 Mon-Sat	£11.75*	Wisper
Intonet	(0181) 941 9195	info@intonet.co.uk	www.intonet.co.uk	8.00-20.00 Mon-Sat	£11.75*	BTnet
K Web	(01273) 763 500	info@k-web.co.uk	www.k-web.co.uk	24 hours a day	£11.69*	Planet Online
KEMAnet	(0181) 366 0511	sales@kema.co.uk	www.kema.co.uk	9.00-18.00 Mon-Fri	£10*	Netkonect
Kingston Internet	(01482) 602 500	info@kingston-internet.net	www.kingston-internet.net	8.30-midnight every day	£9.75*	Planet Online
LarkNet	(01638) 716 423	info@larknet.co.uk	www.larknet.co.uk	8.00-20.00 Mon-Fri/9.00-13.00 sat	£11.75	Cable Internet
London Web Communications	(0800) 026 8306	internet@londonweb.net	www.londonweb.net	9.00-21.00 Mon-Sat/pager Sun	£14.68*	Netkonect
MacLine	(0181) 401 1111	orders@macline.co.uk	www.macline.co.uk	9.00-18.00 Mon-Fri	£14.10*	Atlas
Madhouse Net	(0800) 074 8283	info@madhouse.uk.com	www.madhouse.uk.com	8.00-20.00 Mon-Fri	£11.75*	NACAMAR
Mailbox Internet	(0171) 371 8558	info@mailbox.co.uk	www.mailbox.co.uk	8.00-midnight Mon-Fri	from £5.88*	Netkonect
Mercia Internet	(01827) 69166	sales@mercia.net	www.mercia.net	9.00-17.30 Mon-Fri	£11.50*	Netkonect
Mistral Internet	(01273) 747 432	info@mistral.co.uk	www.mistral.co.uk	9.30-17.30 Mon-Fri/10.00-16.00 Sat	from £9.99*	Wisper
Mitsubishi Electric Internet Services	(0800) 226 600	enquiries@menet.net	www.menet.net	10.00-20.00 Mon-Fri/10.00-14.00 Sat	£69.88* pa	BTnet
Moonlight	(01276) 856 868	sales@moon-light.co.uk	www.moon-light.co.uk	9.00-18.00 Mon-Fri	£14.95*	Cable Internet
Net Online	(0171) 447 7447	sales@nol.co.uk	www.nol.co.uk	9.00-20.00 every day	£11.75*	Global One / Quza
Netcom Internet	(0800) 980 9107	info@netcomuk.co.uk	www.netcom.net.uk	24 hours a day	£14.95*	Netcom
NetDirect Internet	(0800) 731 3311	info@netdirect.net.uk	www.netdirect.net.uk	9.00-21.00 Mon-Fri/9.00-18.00 w/e	from £8.99*	BTnet / BusinessNet
Netkonect	(0171) 345 7777	info@netkonect.net	www.netkonect.nco.uk	9.00-18.00 Mon-Fri/9.00-13.00 Sat	£11.75*	Netkonect
NetMatters	(0345) 573 377	info@netmatters.co.uk	www.netmatters.co.uk	8.00-20.00 Mon-Fri	£11.75*	Wisper / VBCnet
Newbury Internet	(01635) 569 123	sales.enq@newbury.net	www.newbury.net	24 hours a day	£11.75*	Intensive Networks
NewNet	(07000) 639 638	sales@newnet.co.uk	www.newnet.co.uk/home	9.00-22.00 every day	£9.74*	Wisper / VBCnet
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Pinnacle Internet	(01293) 613 686	info@pncl.co.uk	www.pncl.co.uk	9.00-19.00 Mon-Fri	from £10.64*	UUNET
Pipemedia OnLine	(01455) 828 218	sales@pipemedia.net	www.pipemedia.co.uk	24 hours a day	£11.75*	VBCnet
Poptel	(0171) 923 9465	info@poptel.net	www.poptel.org.uk	9.30-18.00 Mon-Fri	£11.75*	GX Networks
PORTHILL.COM	(0702) 110 1200	sales@porthill.com	www.porthill.com	10am-10pm every day	from £3.99*	Cable Internet
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Name	Phone	Email	Web page	Technical support	Cost (pm)	Backbone
Full UK coverage						
Prestel Online	(0990) 223 300	enquiry@netsales.prestel.co.uk	www.prestel.co.uk	24 hours a day	£10.56*	Scottish Telecom
Primex	(01908) 643 597	info@alpha.primex.co.uk	www.primex.co.uk	8.00-21.00 every day	£11.75*	On-Net / Netkonect
Pro-Net Internet Services	(0181) 200 3565	sales@pro-net.co.uk	www.pro-net.co.uk	9.00-18.00 Mon-Fri/9.00-16.00 Sat	£99 pa	Cable Internet / ISPC
ProWeb	(0500) 636 343	sales@proweb.net	www.proweb.co.uk	24 hours a day	from £10*	Diamond Cable Comms
PSI Net	(01223) 577 577	marketing@uk.psi.com	www.uk.psi.com	9.00-21.00 Mon-Fri/9.00-18.00 Sat	£9.95	PSI Net
PurpleNet	(0800) 783 4535	sales@purplenet.co.uk	www.purplenet.co.uk	9.00-22.00 Mon-Fri/10.00-18.00 w/e	£11.69*	Wisper
Python Internet	(0870) 606 0125	sales@python.co.uk	www.python.co.uk	9.30-19.00 Mon Fri	£11.75*	INS
RapidNet	(0151) 722 0304	sales@rapid.net.uk	www.rapid.net.uk	9.00-17.30 Mon-Fri	£9.40*	Cable Internet / ISPC
redvan	(01527) 66 508	info@redvan.net	www.redvan.net	9.00-17.00 Mon-Fri	£10*	Wisper / Cable Internet
Research Machines	(01235) 826 868	sales@rmplc.co.uk	www.rmplc.co.uk	9.00-21.00 Mon-Fri	£12.50	GX Networks / Wisper
Round One Communications	(01237) 425 100	info@rom.net	www.rom.net	9.00-18.00 Mon-Fri	£12	UUNET / GX Networks
RSC Internet	(01224) 585 113	info@rsc.co.uk	www.rsc.co.uk	9.00-18.00 Mon-Sat	£9.99*	BTnet
SAQ Network Services	(0800) 801 514	sales@saqnet.co.uk	www.saqnet.co.uk	24 hours a day	£12.50*	BTnet / C&W / INS
Scotland Online	(0845) 270 0027	admin@sol.co.uk	www.scotland.net	24 hours a day	£11.75*	Scottish Telecom
SIMNET	(0800) 0745 547	sales@simnet.co.uk	www.simnet.co.uk	9.00-21.00 Mon-Fri/9.00-12.00 Sat	£9.40*	Telinco Internet Services
Sonnet Internet	(0171) 891 2000	enquire@sonnet.co.uk	www.sonnet.co.uk	9.00-21.00 Mon-Fri/9.00-18.00 Sat	£14.68*	BusinessNet
SOS Internet	(01271) 321 145	sosi@sosi.net	www.sosi.net	9.00-17.30 Mon-Sat	£11.75*	Intensive Networks
SurfAid	(0870) 907 1000	info@surfaid.org	www.surfaid.org	9.00-21.00 Mon-Fri/10-6 Sat-Sun	from £7.50	GX Networks
Surflink	(0181) 903 2777	info@surflink.co.uk	www.surflink.co.uk	24 hours a day	£7.99	BTnet
Telinco Internet Services	(0800) 542 0800	sales@telinco.net	www.telinco.net	9.00-21.00 Mon-Sat	£5*	Cable Internet / ISPC
The Network Group	(01293) 616 000	info@network-group.com	www.network-group.com	8.30-18.00 Mon-Fri	£15	UUNET
Time Internet	(01483) 860 606	office@time-technology.co.uk	www.time-technology.co.uk	8.30-18.00 Mon-Fri	£12.50	Aladdin
Timewarp Internet	(0161) 950 8855	sales@timewarp.co.uk	www.timewarp.co.uk	9.00-20.30 Mon-Fri	£8.25*	ISPC / Wisper
TMS	(01902) 420 999	sales@tmsnet.co.uk	www.tms.net.uk	8.30-17.00 Mon-Fri	£12*	BTnet
TriNET	(01539) 731 000	dmacdonald@trinetimb.com	www.trinetimb.com	9.00-17.30 Mon-Fri	£11.75*	Planet Online
U-Net	(01925) 484 444	sales@u-net.net	www.u-net.net	24 hours a day	£14.10*	U-Net
UK Online	(01749) 333 333	sales@ukonline.co.uk	www.ukonline.co.uk	24 hours a day	£11.99*	Easynet
UKIP	(01772) 908 000	internet@ukip.co.uk	www.ukip.co.uk	9-6 Mon-Fri/9-5 Sat/10-4 Sun	£146.87* pa	Cable Internet / ISPC / NACAMAR
UUNET (Pipex Dial)	(0500) 567 000	sales@uk.uu.net	www.uk.uu.net	9.00-20.00 Mon-Fri/10.00-18.00 Sat	£12.75	UUNET
Virgin Net	(0500) 558 800	advice@virgin.net	www.virgin.net	24 hours a day	£11.99*	NTL Internet
Wave Rider Internet	(0121) 603 3888	info@waverider.net.uk	www.waverider.co.uk	24 hours a day	£12*	VBCnet
Wavenet	(01253) 794 386	sales@wavenet.co.uk	www.wavenet.co.uk	10.00-18.00 Mon-Fri	£72 pa	BTnet
Webpro	(0181) 886 2424	info@webpro.net.uk	www.webpro.net.uk	24 hours a day	£12.50	Planet Online
Webscape	(01963) 370 800	webmaster@webscape.co.uk	www.webscape.org	24 hours a day	£15	GX Networks
WinNET Communications	(0181) 930 6688	sales@win-uk.net	www.win-uk.net/	9.30-18.00 Mon-Fri	£17.63*	UUNET
Wirenet Amiga	(01925) 496 482	sales@wirenet.co.uk	www.wirenet.co.uk	9.00-19.00 Mon-Fri/9.00-13.00 Sat	£14.25*	U-Net
WiSS	(01248) 602 405	enquiries@wiss.co.uk	www.wiss.co.uk	9.00-22.00 every day	£11.75*	Celtic Internet
Woden Network Systems	(0121) 242 4500	sales@woden.com	www.woden.com	8.30-22.30 Mon-Fri	£10*	VBC Net
Worldwide Web Services	(01784) 898 800	info@webs.co.uk	www.webs.co.uk	9.00-18.00 Mon-Fri	£17.62*	U-Net
X Stream	(0870) 730 6466	info@x-stream.com	www.x-stream.com	24 hours a day	FREE	Colt Internet
Zetnet Services	(01595) 696 667	info@zetnet.co.uk	www.zetnet.co.uk	24 hours a day	£7.50*	BTnet / Wisper
Zoo Internet	(0345) 326 326	support@zoo.co.uk	www.zoo.co.uk	9.00-21.00 every day	£12.50*	Zoo Internet
Zulu Internet	(01494) 758 895	sales@zulu.co.uk	www.zulu.co.uk	8.00-21.00 every day	from £5*	Nildram
East						
AngliaNet	(01473) 211 922	tony@anglianet.co.uk	www.anglianet.co.uk	8.00-21.00 Mon-Sat/11.00-19.00 Sun	£11.75*	Wisper
Foobar Internet	(0116) 233 0033	sales@foobar.co.uk	www.foobar.co.uk	9.00-17.00 Mon-Fri	£11.75*	Netkonect
KeConnect Internet Services	(01473) 403 020	sales@keconnect.co.uk	www.keme.co.uk	9.00-21.00 Mon-Fri /10.00-14.00 w/e	£11.75*	Wisper
Net Solutions Europe	(01255) 233 300	ScottC@nse.co.uk	www.nse.co.uk	9.00-17.00 Mon-Fri	£15	Technocom
RJT Internet Services	(01493) 857 048	postmaster@rjt.co.uk	www.rjt.co.uk	9.00-17.00 Mon-Sat	£7.99	BTnet
Ireland						
Creative Online Media	(01232) 370 124	Info@globalgateway.com	www.globalgateway.com	8.30-17.30 Mon-Fri	£9.95	PSInet
Indigo	(00353) 1 604 6901	info@indigo.ie	www.indigo.ie	9.00-18.00 Mon-Fri	£11.75*	AT&T / BBN Planet
Ireland On-Line	(00353) 1 855 1739	sales@iol.ie	www.iol.ie	9.00-18.00 Mon-Fri	£10	UUNET
Telecom Internet	(00353) 1 269 2222	sales@tinet.ie	www.tinet.ie	9.30-17.30 Mon-Fri	£12	Telecom Eireann
The Internet Business	(01232) 424 190	info@tibus.net	www.tibus.net	9.00-17.30 Mon-Fri	£8.81*	BTnet
Unite Solutions	(01232) 777 338	solutions@unite . net	www.unite.net	9.00-17.00 Mon-Fri	£12.50	BTnet
WydeWorld	(01232) 300 555	info@wydeworld.com	www.wydeworld.com	8.30-21.00 Mon-Fri	from £125* pa	NTL Internet
London and South East						
Adept	(01843) 850 444	sales@adept.co.uk	www.adept.co.uk	8.30-18.00 Mon-Fri	£11.75*	Netkonect
Alpha-Access	(01344) 750 505	office@alpha-access.co.uk	www.alpha-access.co.uk	9.00-17.30 Mon-Fri	£11.75*	Wisper
Amity Internet	(0500) 200 171	info@amity.co.uk	www.amity.co.uk	8.00-19.00 Mon-Fri	£11.63*	BTnet
Bogomip	(0181) 960 3050	info@mail.bogo.co.uk	www.bogo.co.uk	10.00-20.00 Mon-Fri/10-5 w/e	£12	BTnet
CentreNet	(0800) 243 336	info@centre.net.uk	www.centre.net.uk	24 hours a day	£8.33*	BTnet
ComeNet Technology	(0181) 357 9111	sales@come.net.uk	www.come.net.uk	8.30-20.00 Mon-Fri	£35*pq	UUNET / VBCnet
Cygnet Internet Services	(0181) 880 4650	info@cygnet.co.uk	www.cygnet.co.uk	9.00-19.00 Mon-Fri	£8	UUNET
Exconet	(01268) 453 000	sales@exconet.co.uk	www.exconet.co.uk	9.00-22.00 Mon-Fri	£11.75*	Nildram
ExNet Systems	(0181) 296 5577	info@exnet.com	www.exnet.com	10.00-midnight Mon-Fri	£14.10*	VBCnet
FastNet International	(01273) 677 633	info@fastnet.co.uk	www.fastnet.co.uk	9.30-17.00 Mon-Fri	£30 pq	VBCnet
FlexNet	(01638) 711 550	info@flexnet.net	www.flexnet.co.uk	9.00-18.00 Mon-Fri	£11.75*	Netcom
Inter-Computer Technology	(0171) 486 9601	sales@inctech.com	www.inctech.com	24 hours a day	£15	Wisper
INTERact Internet	(01753) 776 699	sales@interact.net.uk	www.interact.net.uk	24 hours a day	£9.40*	Cable Internet / ISPC
KBnet	(01234) 271 900	sales@kbnet.co.uk	www.kbnet.co.uk	9.00-18.00 Mon-Sat	£12.93*	Cabletel
KDD Euro Web	(0800) 010 510	sales@kew.net	www.kew.net	9.00-17.00 Mon-Fri	£17.62*	Internet KDD
KENTnet Internet Services	(01622) 844 801	sales@kentnet.co.uk	www.kentnet.co.uk	9.00-21.00 Mon-Fri/9.00-17.00 w/e	£10.50	BTnet
K2 Internet Services	(01293) 416 666	sales@K2net.co.uk	www.k2net.co.net	24 hours a day	£11.95*	Netkonect

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London Internet	(0171) 838 1199	s.ken1@dialin.net	www.london-internet.net	9.00-18.00 Mon-Sat	£11.75*	Intensive Networks
Maidenet	(01628) 825 757	enquires@maidenet.co.uk	www.maidenet.co.uk	9.00-17.00 Mon-Fri	£15.00	BTnet
MetroNet	(0800) 074 1881	info@metronet.co.uk	www.metronet.co.uk	10.30-19.00 Mon-Sat	£10.79	Quza
Moose	(01923) 238 248	info@moose.co.uk	www.moose.co.uk	8.00-18.00 Mon-Fri	£11.75*	BTnet
Netmania	(0181) 252 1199	info@netmania.co.uk	www.netmania.co.uk	11.00-11.00 Mon-Fri	£42.50 pa	BTnet
Pavilion Internet	(01273) 607 072	info@pavilion.co.uk	www.pavilion.co.uk	24 hours a day	£12.55*	Easynet / BTnet
SoftProg NET	(0181) 788 0656	sales@softprog.co.uk	www.softprog.net	9.00-19.00 Mon-Fri	£14.10*	BTnet
Thames Global Internet Services	(01344) 641 627	info@tgis.co.uk	www.tgis.co.uk	9.00-21.00 every day	£9.99*	Cable Internet / ISPC
UK2NET	(0171) 538 0253	sales@uk2net.com	www.uk2net.com	9.00-18.00 Mon-Fri	from £9.69*	GX Networks
Vodanet	(01708) 863 043	ops.manager@dialin.net	www.vodanet.net	9.00-17.00 Mon-Fri	£12.99	Intensive Networks
VossNet	(01753) 737 800	info@vossnet.co.uk	www.vossnet.co.uk	9.00-19.00 Mon-Fri/10.00-15.00 Sat	£11.75*	Cable Internet / ISPC
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EMNET	(0115) 956 8260	enquiries@emnet.co.uk	www.emnet.co.uk/	8.30-18.00 Mon-Fri	£7.82*	NTL Internet
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Stayfree Internet	(0116) 291 0909	sales@stayfree.co.uk	www.stayfree.co.uk	24 hours a day	£5	Wisper
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Southampton Net	(01794) 504 040	sales@southampton-net.co.uk	www.southampton-net.co.uk	9.00-17.30 every day	£10*	Quza
Supernet	(01534) 880 044	admin@itl.net	www.itl.net	24 hours a day	£14	PSInet
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Surfers Paradise	(01635) 569 123	brian@surfersparadise.net	www.surfersparadise.net	9.00-17.00 Mon-Fri	£12	Intensive Networks
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If you've come across any bizarre Web stories, email them to smiley@internet.emap.com. Any we use win a mystery prize

The News of the Strange

Coffee table raider

Latest news on the ongoing saga of *Lara Croft: The Movie* is, err, no news. Laraphiles will have to content themselves with a new glossy coffee table tome, appropriately called *Lara's Book*, which includes a few *bon mots* by way of introduction from cult Nethead Douglas Coupland.

To infinity and beyond

One of the Net's founding fathers, Vint Cerf of MCI Communications, has been postulating on building an Internet in space. Far from being another blockbuster turkey, it seems NASA is seriously examining proposals for the real-time transmission of cyberspace in outer space. The first stage of this will involve taking Net technology to Mars as part of next year's mission to the red planet.

Colour me beautiful

Also making the news this month has been the Moncrieffe clan of Scotland which has turned to the Net to address the burning issue of what to do with its 200-year-old clan tartan. Apparently the woven red and green motifs are so unpopular they've been putting clansmen off their tatties and neeps. Hence, to mark the its 750th anniversary, members are asking the online world to vote for a new, more tasteful design. The sound of pages of *Ideal Home* and *Elle* rustling through the highlands is deafening.

Leaving a bitter taste

And finally this month, the news that Microsoft is branching out into CDs and coffee. Scary, but true. Packets of Windows '98 roast are now available, priced $6.99, while the CD *Music to Install Windows 98 By* will be given away free with company training manuals. Reactions have been less than complimentary. At a recent fair in Santa Clara County, home to Intel, the star attraction was a Bill Gates lookalike contest; the winners were lined up in the stocks, allowing disgruntled coffee drinkers, music fans and industry pundits to wreak a moment's revenge. If only Smiley could have been there...

The Smiley guide to Internet users

No 6. The TescoNet user

Age: Don't you know it's rude to ask a lady's age...

Appearance: Miranda Richardson's cameo role in *Ab Fab* – trying to juggle career with kids. Boardroom power dresser meets Lynda Bellingham Oxo mum chic.

Hangouts: Dashing from work to parents evening, helping out at school sports day and putting her feet up on the sofa in front of Richard & Judy.

Known associates: Nannies, Bridget Jones types, fans of Susanne Moore's columns and the Tesco checkout staff.

Likes: Anything to do with George Clooney, knocking back chilled Chardonnay in wine bars on a night out with the girls, and going mad with the husband's credit card.

Hates: School holidays, TV cookery programmes, not being able to get a babysitter.

In other words: The kind of woman who wants to check out the share prices and the David Duchovny fan sites online, while putting the kids to bed and writing her report for work tomorrow.

Philosophy: Every little counts. Especially when you know bugger all about computers.

Latest fad: Remortgaging your house and opening bank accounts *en route* to the baked beans, or staying home and letting the supermarket bring the shopping to you.

Not to be confused with: Sainsbury's, BT Internet, a whole slew of high street names jumping on the ISP bandwagon.

Most likely to say: "Now stop that and sit quietly in front of the computer, dear. Mummy's busy now."

Most unlikely to say: "Families? Who needs 'em?"

More from: www.tesco.net

Bookmarks of the rich and famous...

Net celebs open up their browsers and share the secrets of their bookmarks with the *Internet Magazine* readers. This month it's radio personality without portfolio...

Robin Banks

This month's celebrity surfer is radio personality Robin Banks, who until recently presented Virgin Radio's drivetime show every weekday. Previously, he spent four years at radio station Atlantic 252 and also did a stint on the children's channel Nickelodeon – he was asked to leave after strangling one of the puppets. He's been described as sounding like 'Simon Mayo's pervy older brother'. This month he started work on a film about a gang of bikers, currently shooting in France and the Isle of Man. As we went to press, he'd just parted company with Virgin Radio in rather mysterious circumstances.

So Robin, how exactly do you like spending your time online? "Well, the kind of sites that I get a kick out of are the really silly, gross sites that keep popping up on the Web. All that Bert is Evil or weird science type stuff appeals to my sick sense of humour.

So tell us Robin, what are your favourite Web sites?

Big Green Button 2

www.geocities.com/Hollywood/5945/bgb2-01.html

"If you're really, really bored one evening, try this for size. As soon as you visit the site, you'll get addicted and end up hating me for suggesting it in the first place."

Lifetime partners

www.lifetimepartners.com

"I'm not saying my love life is a sham, but this is a great place to buy yourself a Russian wife. It could be the solution to all my problems."

Scoot

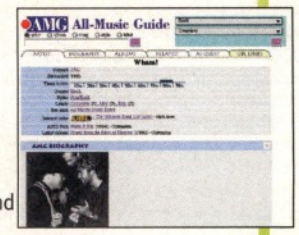
www.scoot.co.uk

"This is one of the Net's most useful resources. Every computer should have it bookmarked."

All Music

www.allmusic.com

"The best music resource around that I've found. Anything you need to know about music is here and the search facility by artist, album, song and label is really comprehensive."



Want to know more about Robin Banks?

Email him and tell him about your favourite sites at robinbanks@globalnet.co.uk

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